tweed NEW HVN
Southern Connecticut's Airport

Environmental Assessment
Wildlife Hazard Deterrent Fence

Hoyle, Tanner Project Number: 063218

Prepared for:

Tweed New Haven Airport Authority
New Haven, Connecticut

Prepared by:

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This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible federal official.

Responsible Federal Official: R. Doucette Date: 6/27/2013
Richard P. Doucette
Environmental Program Manager

Tweed New Haven Regional Airport

Environmental Assessment

Wildlife Hazard Deterrent Fence

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June 2013

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1. INTRODUCTION

1.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 is a key piece of federal legislation designed to raise environmental awareness. It requires federal agencies proposing major actions to fully consider the impacts a project would have on the natural and social environment before capital improvement projects are funded. It requires federal interagency coordination and calls for public involvement in the planning and environmental review process. The Federal Aviation Administration (FAA) complies with and supports both the policies and procedures of NEPA.

Any project involving action by the federal government that could significantly affect the environment requires a federal environmental determination. To address compliance with NEPA and the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508) in airport development, FAA developed and issued *Order 1050.1E: Environmental Impacts: Policies and Procedures, and Order 5050.4B: Implementing Instructions for Airport Actions*. These documents identify three project categories:

> Actions which are categorically excluded (CatEx);
> Actions requiring an environmental assessment (EA); and
> Actions requiring an environmental impact statement (EIS).

As defined in the FAA's *Order 1050.1E*, "...actions categorically excluded are actions which have been found, in normal circumstances, to have no potential [individually or cumulatively] for significant environmental impact." Actions requiring an environmental assessment may or may not have significant environmental impacts but due to the unknown, further analysis is required. And lastly, actions with known significant impacts require an environmental impact statement.

Tweed New Haven Regional Airport (Airport) is examining the effects of enclosing the airfield with a wildlife deterrent fence. The fence alignment would extend across Morris Creek and associated inland and tidal wetlands both on and off Airport property requiring limited property easements or licensing approvals from abutters. Access capability would be constructed on each side of the fence, where possible, to allow passage of inspection and maintenance vehicles. The fence and access is considered a fence corridor.

There are several types of airport-specific actions that pertain to the proposed activity that are determined to be categorical exclusions (CatEx) and listed in FAA *Order 1050.1E*. The acquisition of land for the off-site fence alignment is categorically excluded as long as the fence is categorically excluded per Section 310, paragraph 310b, "Acquisition of land and relocation associated with categorically excluded action."

The access capabilities constructed on each side of the fence are categorically excluded per paragraph 310a:

> 310a. Access road construction and construction, relocation or repair of entrance and service roadways that do not reduce the Level of Service on local traffic systems below acceptable levels.

According to paragraph 310f, the construction of fence lines may be determined to be CatEx.

> 310f. Federal financial assistance, licensing, Airport Layout Plan (ALP) approval, or FAA construction or limited expansion of accessary on-site structures, including storage buildings, garages, small parking areas, signs, fences, and other essentially similar minor development items.

Although paragraph 310f states that fences are categorically excluded, it is unlikely the proposed fence corridor for this project constitutes a "minor development." Therefore, the proposed fence alignment is not excluded under paragraph 310f.

When determining whether a proposed action is categorically excluded, extraordinary circumstances must be considered. Extraordinary circumstances for airport actions are listed in Section 304 of FAA *Order 1050.1E*. Paragraph 304c discusses and includes any impact on natural, ecological or scenic resources of Federal, tribal, State or local significance that will trigger an extraordinary significance.

> 304c. An impact on natural, ecological (e.g., invasive species), or scenic resources of Federal, Tribal, State, or local significance (for example: Federally listed or proposed endangered, threatened, or candidate species or designated or proposed critical habitat under the Endangered Species, Act; resources protected by the Fish and Wildlife Coordination Act; wetlands; floodplains; coastal zone; prime unique, State or locally important farmlands; energy supply and natural resources,; and wild and scenic rivers, including study of eligible river segments and solid waste management.

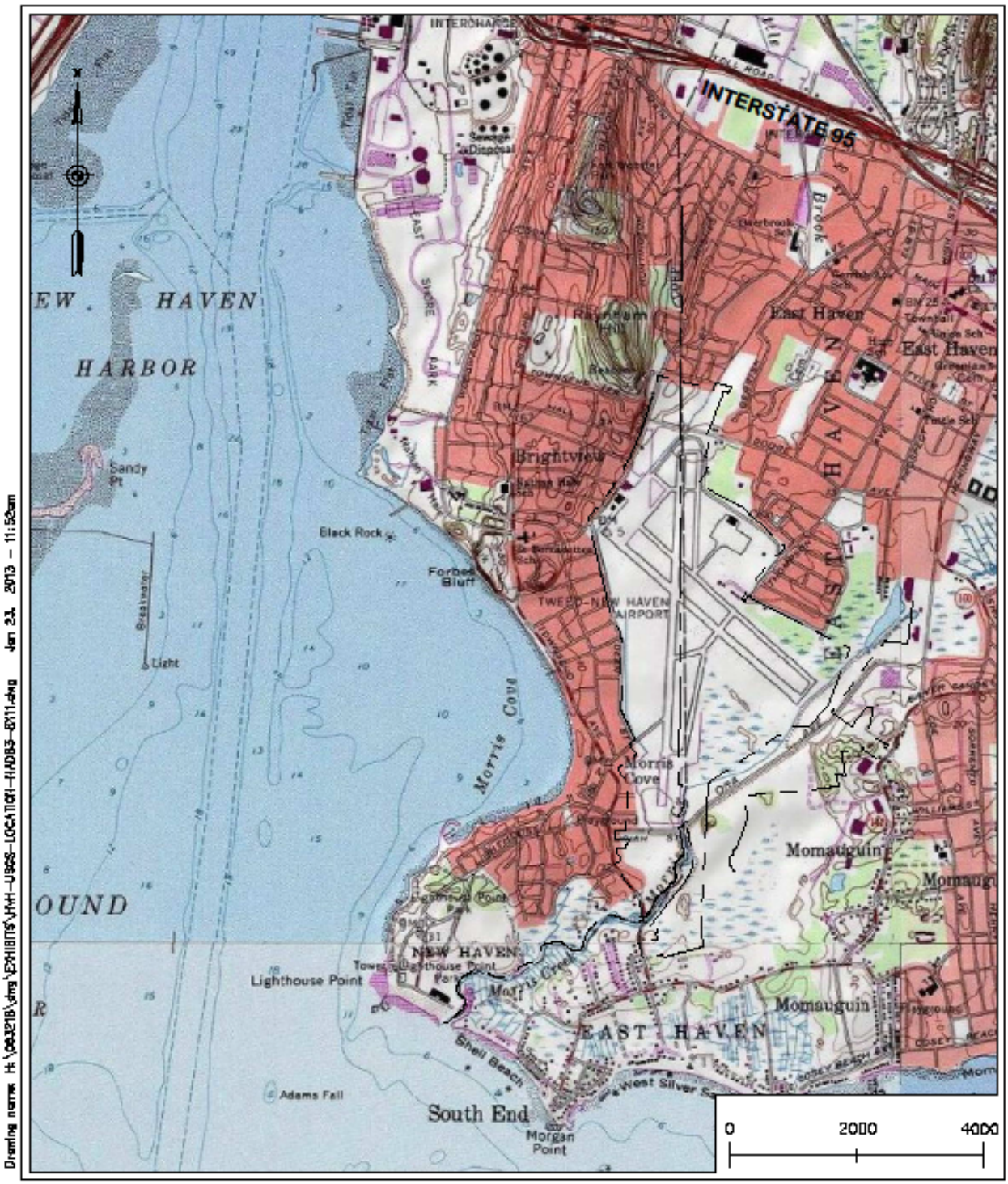
There are inland and tidal wetlands in the vicinity of the Airport as described in Chapter 3. The project site is located within a floodplain and resides in a coastal zone. The potential for impacts to these resources from the proposed project actions are an extraordinary circumstance by definition and preempt a determination of a categorical exclusion for the proposed fence corridor. Consistent with NEPA and the CEQ regulations, the preparation of an Environmental Assessment is the procedural course of action.

1.2 Background

Tweed New Haven Regional Airport is a public airport located on the coast of Connecticut on the town line boundary of the City of New Haven and Town of East Haven (Figure 1, Location Map). The Airport is owned by the City of New Haven and operated by the Tweed New Haven Airport Authority, a public instrumentality established by the Connecticut General Statutes 15-120i in 1997. The Airport is classified as a Commercial Service-Primary-Short Haul (less than 500 miles) airport with both air carrier and general aviation (GA) activity (FAA, 2002). The Airport is certified under FAR Part 139 and is inspected annually to ensure compliance with appropriate design criteria by FAA.

The greater New Haven area is comprised of congested urban and suburban residential neighborhoods, as well as institutional, commercial, industrial/manufacturing and port facilities, and a network of highways, bridges and parklands located throughout the City and adjacent communities. The Airport is bordered by residential homes to the west, southeast, and north of the airfield. A variety of commercial properties border the east side of the airfield, including a capped landfill and transfer station, while west of the airfield lays Morris Cove. South of the airfield is Long Island Sound, and south and west of the Airport are tidal influenced wetlands; these areas are primarily located between Silver Sands Road and Long Island Sound, as well as along Morris Creek downstream of the existing tide gate. The tidal influenced wetlands provide

Figure 1 – Location Map



Hoyle, Tanner & Associates, Inc.					TWEED–NEW HAVEN AIRPORT NEW HAVEN, CONNECTICUT	FIGURE
CHKD. BY	DR. BY	DES. BY	DATE	SCALE:	LOCATION MAP	1
RMF	JLC	TJA	JAN, 2013	AS SHOWN		

habitat to a variety of wildlife including such mammalian species as white-tailed deer, Eastern coyotes, raccoon, red fox, striped skunk and muskrat.

The US Department of Agriculture (USDA) Animal and Plant Health Inspection Service, Wildlife Services (WS), conducted a Wildlife Hazard Assessment (WHA) from October 2007 to October 2008 at the Airport at the request of the Tweed New Haven Airport Authority as per the requirements of Federal Aviation Regulations (FAR) Part 139.337, Wildlife Hazard Management. Prior to this date, the Airport had recorded numerous observations of wildlife accessing Airport flight patterns or aircraft movement areas. Wildlife within these areas is capable of causing substantial damage to aircraft and human life (USDA 2008). Operations staff monitors wildlife activity on a regular basis through airfield inspections and wildlife sweeps.

1.3 Federal, State and Local Agency Jurisdiction

The proposed project would require coordination with several state and federal resource agencies and may require permitting associated with resource impacts as listed in Table 1-1.

Table 1-1 Agency Coordination

Agency	Resource	Regulatory Authority	Potential Permit
US Army Corps of Engineers (ACOE)	Tidal and Freshwater Wetlands	Section 10 of the Rivers and Harbors Act; CGS Section 22a-32; Section 404 of the Clean Water Act	Work within tidal or freshwater wetlands may require an Individual or General Permit
Connecticut Department of Energy and Environmental Protection (CTDEEP) Inland Water Resources	Freshwater or Inland Wetlands	CGS Sections 22a-36 through 22a-45a	Work within freshwater or inland wetlands may require an Individual or General Permit

Agency	**Resource**	**Regulatory Authority**	**Potential Permit**
CTDEEP's Office of Long Island Sound Programs (OLISP)	Coastal Resources and waters below the Coastal Jurisdiction Line (CJL)	Connecticut Coastal Management Act CGS Sections 22a-90 through 22a-112; Structures Dredging and Fill Act CGS Sections 22a-359 through 22a-363f; Tidal Wetlands Act CGS Sections 22a-28 through 22a-35	Work oceanward of the CJL requires a permit and review of the project for coastal consistency, or may be addressed through a certificate of permission, (COP)
CTDEEP Inland Water Resources	Coastal and Tidal Waters	Section 401 of the Clean Water Act	401 Water Quality Certification
CTDEEP	Floodplains	CGS Sections 25-68b through 25-68h	Flood Management Certification
CTDEEP and US Environmental Protection Agency (EPA)	Stormwater/NPDES	40 CFR Section 122.26	Construction General Permit

2. PURPOSE AND NEED

2.1 Overview

The Purpose and Need within a NEPA document is a formal statement approved by a federal agency agreeing to the need for the project and the overall project purpose. The statement documents the justification for the project study and provides the basis for evaluating the effectiveness of alternatives.

2.2 Purpose and Need

The *purpose* of the proposed action at Tweed New Haven Regional Airport is to improve safety and prevent human injury or fatality by excluding deer and other hazardous wildlife from the airfield.

There is a well-defined, immediate and urgent *need* to keep wildlife from entering the Airport runway areas. On September 20, 2012 at approximately 2pm, two deer entered the runway as a jet was taking off. The aircraft struck one of the animals which caused damage to the wing and landing gear. The collision was fatal for the deer. The aircraft was able to abort the takeoff and no injuries were reported as a result of this incident. A copy of the Incident Report prepared after the incident by Airport staff is provided in Appendix A.
The USDA Wildlife Services noted during its initiation of a Wildlife Hazard Assessment (WHA; 2009) that the Tweed New Haven Regional Airport is only partially fenced and that some of the existing perimeter fence was in poor condition. Both circumstances allow wildlife such as deer and other large mammals, such as coyotes, easy access to the airfield. Due to the number of deer sightings, both the U.S. Fish & Wildlife Service (FWS) and the CT Department of Energy and Environmental Protection (CTDEEP) have issued wildlife depredation permits to the Airport. *The presence of these animals on the Airport poses a significant hazard to public safety and can cause human injury or fatality upon collision with an aircraft during takeoff or landing.*

As will be detailed in Chapter 3, wildlife habitat proximate to the airport has decreased substantially since the establishment of the Airport. As development increased over the past several decades, the number of animals decreased primarily due to habitat loss and the increasing scarcity of their life-sustaining requirements (i.e. food, water, cover and breeding/nesting sites). However, their density increased within the remaining natural areas, thus forcing them into previously avoided marginal habitats in search of food, etc. Population levels are density dependent, particularly for mammals, with mortality increasing in direct proportion to the population density. Such mortality, through its mode of operation, keeps a population stable (Dasmann 1964). Due to the relative stability of development in the recent past, wildlife populations in and around the airport are believed to have reached their biotic potential and presently are in a state of dynamic equilibrium. While their actual numbers may vary over time due to increases/decreases in mortality/natality and other factors, the number of individuals will likely remain relatively stable.

Depredation activities, in conjunction with the existing fencing, have only barely managed to prevent life-threatening wildlife interactions until 2012. The aircraft strike was evaluated by FAA and the Airport as a clear indication that existing wildlife management and deterrent activities needed to be reviewed and modified. Consultation with USDA WS resulted in a recommendation that all areas of the perimeter fence be upgraded to appropriate and recommended heights, and the rest of the airfield should be completely enclosed with fence (Appendix A).

2.3 Public Involvement

A Draft EA was prepared for the Project in December 2012 and submitted to the stakeholder agencies for review and comment as listed in Chapter 7. Contact was also made prior to the Draft EA during the development of design and alternatives. Comment letters and agency correspondence are included in Appendix B. The East Haven Town Council held a publicly advertised special meeting on December 13, 2012 at the East Haven Senior Center, East Haven, Connecticut (Meeting Minutes, Appendix B).

Comments and issues identified from the public and agency stakeholders have been reviewed, acknowledged and incorporated into the alternatives analysis, project design and analysis of environmental consequences where feasible and practicable. This document will be publicly displayed and available for comment on the Airport's website (www.flytweed.com). Future comments from the public or agency stakeholders will be incorporated into the Project, where feasible.

3. PROPOSED ACTION AND ALTERNATIVES

3.1 Proposed Action: Wildlife Deterrent Fence

In accordance with the recommendations of the USDA WS, Tweed New Haven Regional Airport proposes to completely enclose the airfield with a wildlife fence. In response to the urgent need for this fence in order to increase the safety of the Airport and prevent additional collisions between wildlife and aircraft, the proposed fence would be constructed through a phased approach.

Phasing

The Airport property includes uplands, freshwater wetland, and tidal wetland land types, as detailed in Chapter 4, Affected Environment. Fence construction in upland areas requires a minimal amount of federal, state or local permitting, and could be constructed in the next few months as Phase 1 of the project. This would include a majority of the required new fence (79%) and would allow for the immediate and significant reduction of wildlife access to a majority of the Airport property (Figure 2).

In Phase 2, the fence would be installed in locations containing freshwater wetlands under the jurisdiction of the Connecticut Department of Energy and Environmental Protection (CTDEEP) Inland Water Resources Division; the project would require permits for associated impacts to these resources. The permitting process in this regard would require more time than Phase 1, but could be completed in a reasonable time-frame. This would include approximately 16% of the fence as shown on Figure 2.

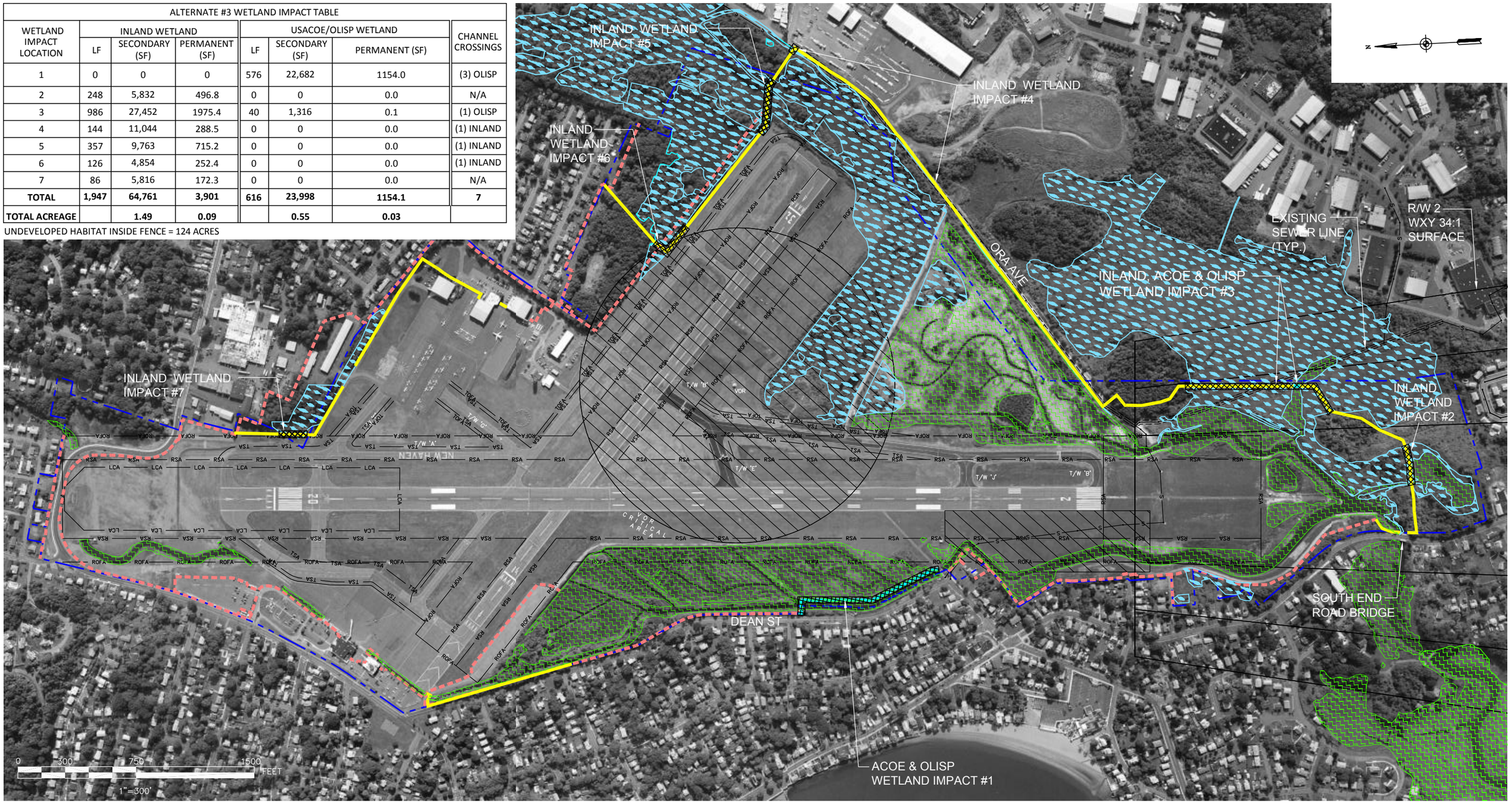
Phase 3 would allow for installation of the fence in tidal wetland areas under the jurisdiction of CTDEEP Office of Long Island Sound Programs (OLISP) and the US Army Corps of Engineers (ACOE). Although these areas are very small in length, 616 linear feet, or approximately 5% of the total new fence length, both agencies have indicated that potential impacts to these resources will be carefully scrutinized, and that their associated permitting processes may require mitigation. The identification and selection of mitigation may involve an extensive and time-consuming effort on behalf of the Airport. It is the long-term goal of the Airport to close these remaining fence gaps and completely enclose the Airport with fencing. The timing to initiate Phase 3 would depend on the nature of any mitigation requirements for these impacts, particularly impacts to wildlife habitat, which may require off-site mitigation in order to satisfy ACOE permit conditions.

Fence Location

Fencing along an airport property can become a hazard to aircraft if not placed in appropriate locations. Because of the angles and associated clear space required by aircraft to takeoff and land, as well as distances needed to successfully maneuver along the runways, and allow for additional space to respond to potential aircraft malfunctions, there are areas around the runways which cannot be used for fence locations. The fence design must adhere to constraints in several locations due to FAA regulations directing set-backs from the Very High Frequency Omni-directional Range (VOR), Runway Safety Area (RSA) lengths and widths, and other areas which must remain clear of impediment to aircraft. These areas are shown on Figure 3. Notably, the fence could not cross the existing berm at Pig Farm (aka Haul Road) because of the VOR critical area setback, and cannot be placed along the edges of the mowed grass areas at the sides and ends of the runway because of RSAs and FAR Part 77 transitional surfaces.

ALTERNATE #3 WETLAND IMPACT TABLE							
WETLAND IMPACT LOCATION	INLAND WETLAND			USACOE/OLISP WETLAND			CHANNEL CROSSINGS
	LF	SECONDARY (SF)	PERMANENT (SF)	LF	SECONDARY (SF)	PERMANENT (SF)	
1	0	0	0	576	22,682	1154.0	(3) OLISP
2	248	5,832	496.8	0	0	0.0	N/A
3	986	27,452	1975.4	40	1,316	0.1	(1) OLISP
4	144	11,044	288.5	0	0	0.0	(1) INLAND
5	357	9,763	715.2	0	0	0.0	(1) INLAND
6	126	4,854	252.4	0	0	0.0	(1) INLAND
7	86	5,816	172.3	0	0	0.0	N/A
TOTAL	**1,947**	**64,761**	**3,901**	**616**	**23,998**	**1154.1**	**7**
TOTAL ACREAGE		**1.49**	**0.09**		**0.55**	**0.03**	

UNDEVELOPED HABITAT INSIDE FENCE = 124 ACRES



TIDAL WETLANDS DELINEATED PER CTDEEP TIDAL WETLANDS ACT AND FEDERAL JURISDICTION

INLAND WETLANDS PER CTDEEP JURISDICTION

PROPOSED WILDLIFE FENCE

EXISTING FENCE

PROPOSED WILDLIFE FENCE ACOE & OLISP JURISDICTION

PROPOSED WILDLIFE FENCE CTDEEP INLAND WETLANDS JURISDICTION

APPROXIMATE AIRPORT PROPERTY LINE

TWEED NEW HAVEN REGIONAL AIRPORT
PROPOSED WILDLIFE FENCE LOCATION ALT#3

FIGURE 2

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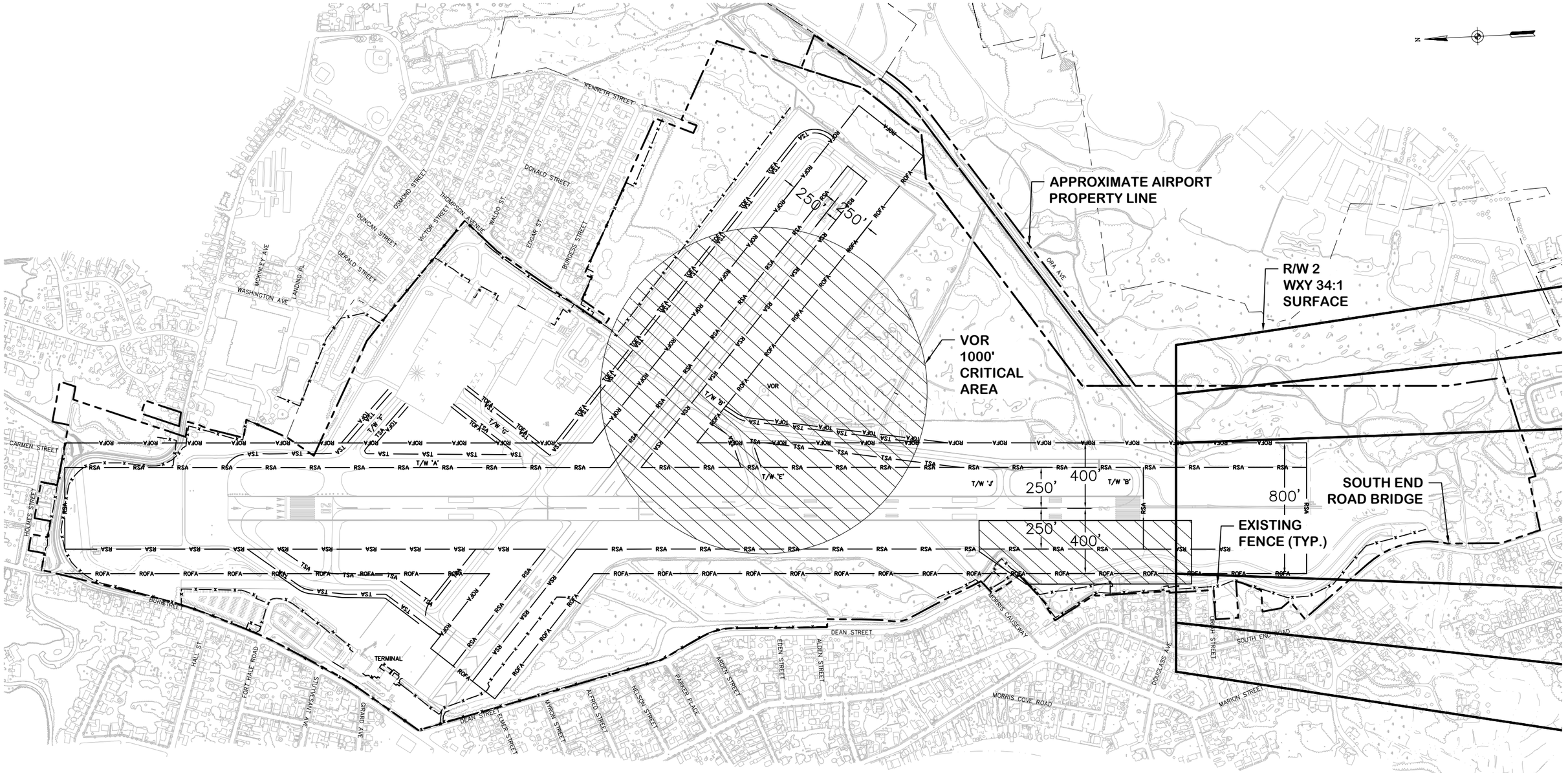

FIGURE 3

TWEED NEW HAVEN REGIONAL AIRPORT
AIRPORT CRITICAL AREAS

0 300 750 1500 FEET

1"=300'

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Fence Design

The fence would have the effective height of nine feet with eight feet of vertical fence fabric and three strands of out-facing barbed wire along the top. In upland locations, a two foot fabric skirt would be buried on the exterior to discourage burrowing underneath the vertical fence, while in wetland areas the fence skirt would either be laid on the ground and tied into the substrate to prevent animals from digging under the edge, or removed based on permitting conditions from CTDEEP, OLISP and ACOE (Appendix C, Fence Design Details).

Vegetation can undermine the effectiveness of the barrier by either creating a bridge over the barbed wires for both people and animals, or growing through the fence and lifting the fabric, creating openings along the bottom. In order to avoid such circumstances, the fence would be constructed within a varying-width corridor of approximately thirty (30) feet to allow room for access for inspection and maintenance. Where practicable and in upland and non-wetland buffer areas, a 15-foot access road would be constructed along one side of the fence to allow for vehicle monitoring. In locations within wetlands, the access corridor may be reduced on one or both sides such that the access corridor would only allow for clearing and vegetation removal via the use of small equipment and on foot.

In freshwater and tidal wetlands, fence poles would be hydraulic ram driven, not cemented in place. This is typically done with a hydraulic hammer/ram attachment mounted on a low pressure track mounted skid steer, as detailed in Section 5.2, Environmental Consequences, Biotic Resources.

The existing fence would be evaluated for effectiveness such as height, vegetation buffer, barbed wire, openings, and gaps in the barrier. Sections that do not meet USDA recommendations would be removed and replaced, or enhanced and repaired.

In the case where the proposed fence alignment is off Airport property, the Airport would be required to acquire property easements or licensing approvals from abutters. The Airport has begun preliminary negotiations with abutters.

3.2 Alignment Alternatives

Federal guidelines require that alternatives to the proposed project must be identified and evaluated in order to determine the alternative that best meets the evaluated criteria, with the least amount of overall impacts to the ecological and human environment, as agreed upon through consensus by stakeholders. It is imperative that these alternatives be reasonable, feasible, and meet the project purpose and need in order to be eligible for detailed analysis.

The following briefly summarizes and evaluates the alternatives considered for this project. Table 3-1 following this section outlines the alternatives, associated potential impacts, and cost, and acts as a decision matrix.

No Action – No Improvements to Existing Conditions

The existing conditions do not deter wildlife such as deer and other animals from entering the airfield because the existing fence does not completely surround the Airport. The Airport has the ability to hire personnel to “take” an animal, but this is only during certain hours of the day and is only effective if the personnel locate and target the wildlife.

The Airport has existed in this location since 1931; during the past eighty-two years, a large portion of the land surrounding the Airport has transitioned from woodlands, fields and wetlands into residential and industrial development. Such transitions push wildlife into the limited remaining habitat areas, and put pressure on those species which require large ranges for feeding, foraging and mating to utilize the Airport areas as habitat. USDA WS noted "high numbers of deer and coyotes" on the airfield during their Wildlife Hazard Assessment (as noted in their recommendation letter, Appendix A). Allowing the existing condition to continue would increase the potential for interactions between wildlife and aircraft, and could lead to human fatalities in the future.

Although this alternative does not impact the surrounding environment, the potential for property damage and hazard to life caused by another deer or other wildlife strike has an indeterminate cost and loss associated with it. *This Alternative, by its very definition, does not meet the purpose and need for the project***.**

Action Alternative – Fence Alignment #1

This alternative was the first approach developed to meet the USDA recommendations by placing the fence along the existing property line (Figure 4). The proposed fence alignment would completely enclose the airfield and enhance the existing fence line, thus meeting the purpose and need for the project. The proposed fence alignment along the property line would maintain a fence as close to the outer limits of the Runway Protection Zone (RPZ) as possible.

However, this alignment would have to cross large areas of freshwater or inland wetlands and the tidal wetland systems at the south-east end and west of Runway 2-20. Approximately 96,197 square feet (sq ft; 2.21 acres) of jurisdictional (permanent and secondary) freshwater/inland and 24,976 sq ft (0.57 acres) of tidal wetlands would be impacted by this alignment. Additionally, 140 acres of wetlands and uplands would be enclosed within the fence and removed from potential habitat for all medium- to large-sized wildlife.

Action Alternative- Fence Alignment #2

In an effort to minimize impacts to wetlands and wildlife, and in direct response to the concerns of ACOE and CTDEEP agency staff regarding the potential for a scaled-back alternative alignment to serve the purpose and need for the project, this alternative proposes to install the fence as shown on Figure 5. Changes in this alignment include placing the fence along Pig Farm Road and across the edge of the paved southern end of Runway 2-20. This alignment was developed as an initial approach to reduce impacts to wetlands, and notably to allow the Ora Avenue tidal wetland restoration area to remain outside the fenced area.

As evident on Figure 5, this fence alignment would place the fence within some of the exclusion zones developed per FAA regulations, including the Runway Safety Areas (RSAs), Runway Object Free Area (ROFA) and the VOR critical area. FAA staff suggested allowances could be made for alternative, non-metal fence materials within the VOR critical area, which would increase the project cost. However, the ROFA and RSA have restrictions on object heights and vehicle movements for aviation safety. The RSA was developed to reduce the risk of damage to the aircraft in an event of landing short or over-running the runway. The ROFA was developed to protect the wingspan of an aircraft that would come to rest at the edge of the RSA. No object taller than 3 inches can be fixed in an RSA and no objects in the ROFA may protrude above the nearest point of the RSA. The proposed fence alignment in this alternative within these areas is a clear violation of these restrictions. There are very few exemptions to these

ALTERNATE #1 WETLAND IMPACT TABLE							
WETLAND IMPACT LOCATION	INLAND WETLAND			USACOE/OLISP WETLAND			CHANNEL CROSSINGS
	LF	SECONDARY (SF)	PERMANENT (SF)	LF	SECONDARY (SF)	PERMANENT (SF)	
1	0	0	0.0	576	22,506	1154.0	(3) OLISP
2	1,558	43,209	3121.3	48	1,220	96.2	(1) OLISP
3	142	10,871	284.5	0	0	0.0	(1) INLAND
4	915	25,721	1833.1	0	0	0.0	(1) INLAND
5	87	10,983	174.3	0	0	0.0	N/A
TOTAL	**2,702**	**90,784**	**5413.2**	**624**	**23,726**	**1250.1**	**6**
TOTAL ACREAGE		**2.08**	**0.12**		**0.54**	**0.03**	

UNDEVELOPED HABITAT INSIDE FENCE = 140 ACRES

TIDAL WETLANDS DELINEATED PER CTDEEP TIDAL WETLANDS ACT AND FEDERAL JURISDICTION

INLAND WETLANDS PER CTDEEP JURISDICTION

PROPOSED WILDLIFE FENCE

EXISTING FENCE

PROPOSED WILDLIFE FENCE ACOE & OLISP JURISDICTION

PROPOSED WILDLIFE FENCE CTDEEP INLAND WETLANDS JURISDICTION

APPROXIMATE AIRPORT PROPERTY LINE

TWEED NEW HAVEN REGIONAL AIRPORT
PROPOSED WILDLIFE FENCE LOCATION ALT#1

FIGURE 4

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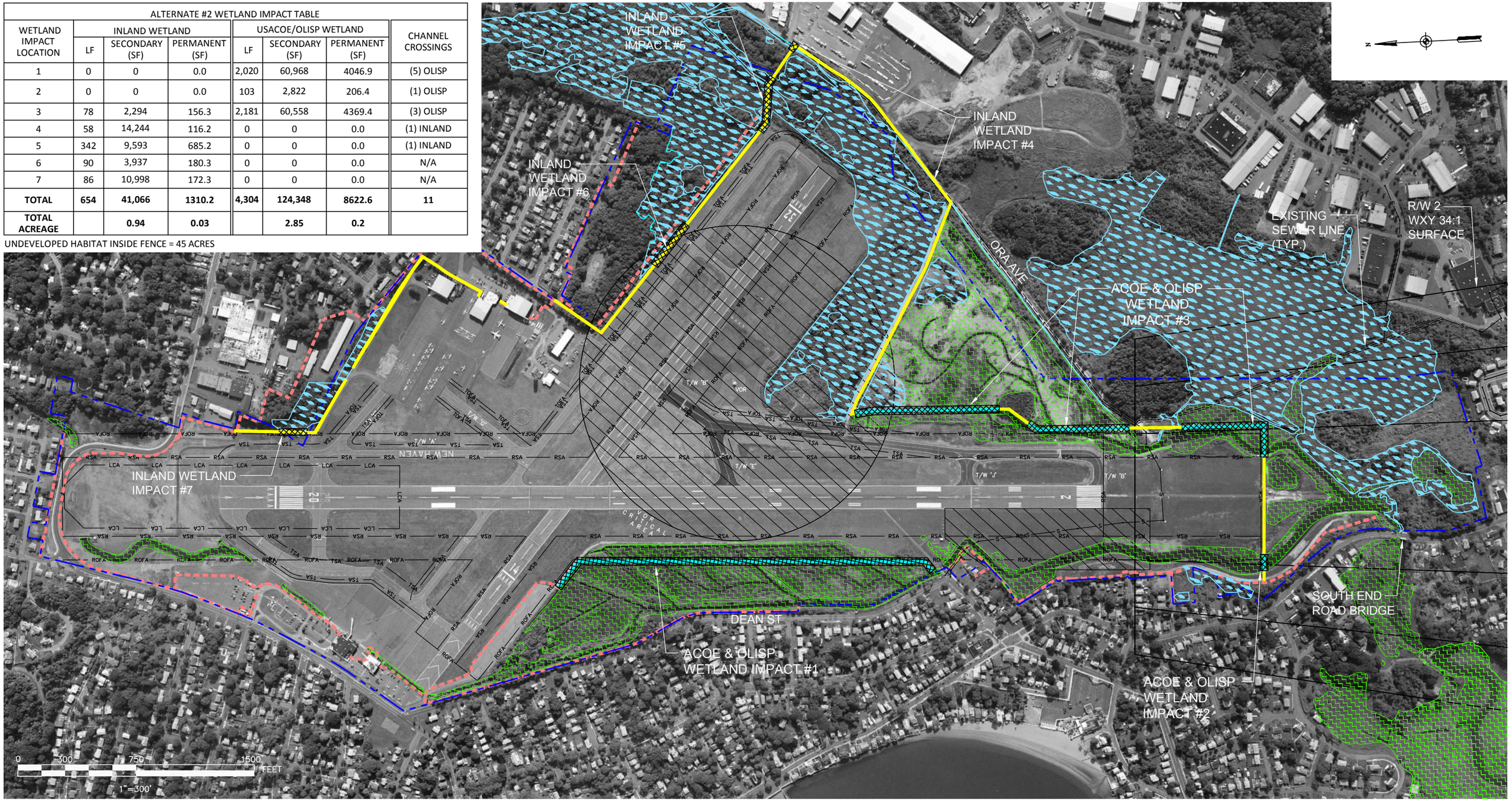
ALTERNATE #2 WETLAND IMPACT TABLE							
WETLAND IMPACT LOCATION	INLAND WETLAND			USACOE/OLISP WETLAND			CHANNEL CROSSINGS
	LF	SECONDARY (SF)	PERMANENT (SF)	LF	SECONDARY (SF)	PERMANENT (SF)	
1	0	0	0.0	2,020	60,968	4046.9	(5) OLISP
2	0	0	0.0	103	2,822	206.4	(1) OLISP
3	78	2,294	156.3	2,181	60,558	4369.4	(3) OLISP
4	58	14,244	116.2	0	0	0.0	(1) INLAND
5	342	9,593	685.2	0	0	0.0	(1) INLAND
6	90	3,937	180.3	0	0	0.0	N/A
7	86	10,998	172.3	0	0	0.0	N/A
TOTAL	**654**	**41,066**	**1310.2**	**4,304**	**124,348**	**8622.6**	**11**
TOTAL ACREAGE		**0.94**	**0.03**		**2.85**	**0.2**	

UNDEVELOPED HABITAT INSIDE FENCE = 45 ACRES



TIDAL WETLANDS DELINEATED PER CTDEEP TIDAL WETLANDS ACT AND FEDERAL JURISDICTION

INLAND WETLANDS PER CTDEEP JURISDICTION

PROPOSED WILDLIFE FENCE

EXISTING FENCE

PROPOSED WILDLIFE FENCE ACOE & OLISP JURISDICTION

PROPOSED WILDLIFE FENCE CTDEEP INLAND WETLANDS JURISDICTION

APPROXIMATE AIRPORT PROPERTY LINE

TWEED NEW HAVEN REGIONAL AIRPORT
PROPOSED WILDLIFE FENCE LOCATION ALT#2

FIGURE 5

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rules, and a fence is not one of them. This alternative is not a viable alternative due to the potential for aircraft damage and injury to or loss of human life.

Minor fence adjustments could be made in the field to skirt the edge of the RSA/ROFA, but would push the fence downslope into the restored wetland and stormwater drainage channels along the edge of the runway. Thus, the trade-off from minimizing wetland impacts, and leaving less wetland areas within the fence and cut-off from wildlife utilization, would be offset by wetland impacts in different locations, within a highly functional restored wetland system. Impacts from this design would include 42,376 sq ft (0.97 acres) of jurisdictional (permanent and secondary) freshwater/inland wetlands and 132,971 sq ft (3.05 acres) of tidal wetlands. OLISP and CTDEEP staff clearly stated shifting the fence into these areas was not an alternative that they would see as the least impacting, and indicated that permits for this alignment may not be obtainable. Approximately 45 acres of wetlands and uplands would be enclosed within the fence and removed from potential habitat for all medium- to large-sized wildlife.

Action Alternative – Fence Alignment #3

This alternative proposes to install the fence along the alignment as shown on Figure 2 to minimize impacts to wetlands and wildlife, as well as develop a fence that is cost-effective, feasible to build and maintain, and would meet the requirements of the permitting agencies. This alignment differs from Alignments #1 and #2 by not following the Airport property line, notably in the southeast corner, and avoiding, to the extent practicable, impacts to tidal wetlands. It is anticipated that jurisdictional (permanent and secondary) impacts to freshwater/inland wetlands would approximate 68,662 sq ft (1.58 acres) and tidal wetlands would approximate 25,152 sq ft (0.58 acres). Approximately 124 acres of wetlands and uplands would be enclosed within the fence.

Due to the urgent need for the fence to be installed as quickly as possible in order to prevent future collisions between wildlife and aircraft, the Phased approach to construction along this alignment would allow large portions of the fence to be installed while completing the federal, state and local permitting processes for impacts to the wetlands.

3.3 Alternatives Reviewed but Eliminated from Detailed Analysis

In addition to the alternatives presented above for analysis in this document, there were other alternatives developed which, although initially meeting the spirit of the purpose and need, were determined to not meet the FAA guidance of being “reasonable or feasible” enough to carry through the full analysis of impacts in this document.

In an attempt to avoid as many freshwater and tidal wetland impacts as possible, several conceptual alternative fence alignments were developed looking at combinations of the following options: placing the alignment closer to the runway edges, outside of the wetland boundaries along the edge of upland adjacent to the Runway Object Free Area (ROFA) and the Runway Safety Areas (RSAs), within the VOR, and within differing configurations in the wetland system to the south of Runway 2-20. There is not a contiguous upland path along the outside of any of the wetland areas; thus, wetland impact is unavoidable along the southeast quadrant of the Airport. None of these conceptual alternatives were found to be reasonable or feasible for implementation; each alternative either increased impacts to tidal or freshwater wetlands or wildlife habitat above those listed above, or was technically infeasible or cost-prohibitive to develop.

3.4 Alternatives Matrix

The previous alternatives were analyzed and compared to define the issues and provide a clear basis for the most reasonable choice amongst the options. Table 3-1 outlines the alternatives, the associated impacts, and the cost.

Table 3-1 Alternatives Matrix

Alternative	Description	Preliminary Wetland Impacts*	Preliminary Wildlife** Impacts
No Action	No improvements	None	Wildlife would continue to access the Airport, creating significant adverse effects
Action Alternative-Fence Alignment #1	Fence alignment along existing property boundaries where feasible.	96,197 sq ft freshwater and 24,976 sq ft tidal wetland impacts	140 acres wetland and upland habitat excluded from use
Action Alternative-Fence Alignment #2	Fence alignment designed to run along runway edges, minimize wetland impacts and minimize area of fenced-in wetlands, including avoiding the created mitigation system.	42,376 sq ft freshwater and 132,971 sq ft tidal wetland impacts	45 acres wetland and upland habitat excluded from use
Action Alternative-Fence Alignment #3	Fence alignment designed to avoid and minimize wetland impacts to the extent practicable while keeping the fence outside of ROFA, RSA and VOR per FAA requirements	68,662 sq ft freshwater and 25,152 sq ft tidal wetland impacts	124 acres wetland and upland habitat excluded from use

*Refer to Table 5-1 for a more detailed analysis of potential wetland impacts.
**Wildlife is described as non-avian, medium- to large-sized species. Refer to Section 5.2.

4. AFFECTED ENVIRONMENT

4.1 Introduction

There are 23 possible environmental impact categories identified by FAA *Order 1050.1E*, Appendix A. Per direction provided in FAA Guidance Memo #2, 2011, it is not the intent of this document to provide detailed discussion or analysis of all categories. This section succinctly describes *only* those environmental resources the proposed action and its reasonable alternatives, if any, are likely to affect (FAA *Order 1050.1E*, Paragraph 405e). The amount of information on a potentially affected resource is based on the extent of the expected impact and is commensurate with the impact's importance.

The No Action, Proposed Action, and the Action Alternative would not affect:

- Air Quality
- Coastal Barriers
- Compatible Land Use
- Construction
- Section 4(f)
- Federally-listed Endangered and Threatened Species
- Energy Supplies, Natural Resources, and Sustainable Design
- Environmental Justice
- Farmlands
- Hazardous Materials
- Induced Socioeconomic
- Light Emissions and Visual Effects
- Noise
- Social Impact
- Solid Waste
- Wild and Scenic Rivers

The proposed project would impact the following environmental categories:

4.2 Biotic Resources

Biotic (living) resources refer to the various types of flora (plant life) and fauna (animal life) in a particular area. The term also refers to vegetative communities, both upland and wetland, that support the fauna associated with a given area, including *state-listed endangered/threatened or species of special concern*. There are no Federally-listed endangered or threatened species on site (Appendix B).

Upland Vegetation

Upland vegetative communities within and near the Airport primarily consist of maintained grounds, old fields/successional lands and wooded knolls. All of the upland areas have been highly influenced by human activity.

The maintained grounds areas include the airport runways and structures, asphalt roads, and neighboring residential and industrial lots. Most of the developed lands are vegetated with lawns, and landscaped with trees and shrubs. Old field conditions exist generally adjacent to

the maintained grounds portions of the airport. These fields are dominated by herbaceous vegetation that is cut on a seasonal basis.

An existing Grassland Management Plan is implemented for the grassland and old field areas on Airport property, and is included in Appendix D.

Several wooded knolls occur on and off the Airport east of Runway 2/20, south of Runway End 2 and northeast of Ora Avenue. These knolls range up to approximately 25 feet above the surrounding landscape. Bedrock is close to, and often exposed above, the ground surface.

Aquatic and Wetlands Vegetation

Wetlands on and adjacent to the Airport which provide wildlife habitat include tidal and freshwater wetlands and are described in detail Section 4.7 and as shown on Figure 6. Briefly, a large contiguous freshwater and tidal wetland system that borders on or drains into Morris Creek and Tuttle Brook occurs on the site.

Wetland habitats present include freshwater emergent marsh, shrub-scrub and wooded swamp plant communities and tidal marsh wetlands. The majority of tidal marsh habitat is dominated by the invasive Common Reed [*(Phragmites australis)*, a.k.a. *Phragmites*], extremely dense in some locations, limiting available light and space for other plant species and decreasing plant diversity. Other species include saltwater cordgrass (*Spartina alterniflora*) and salt meadow cordgrass (*S. patens*).

Over the past five years, the Morris Creek tide gate has been operating in a manner that allows tidal flows to wetlands landward of the tide gate. To date, this has allowed for the partial conversion of lands dominated by *Phragmites* to lands dominated by typical salt marsh species, e.g. saltwater cordgrass and salt meadow cordgrass.

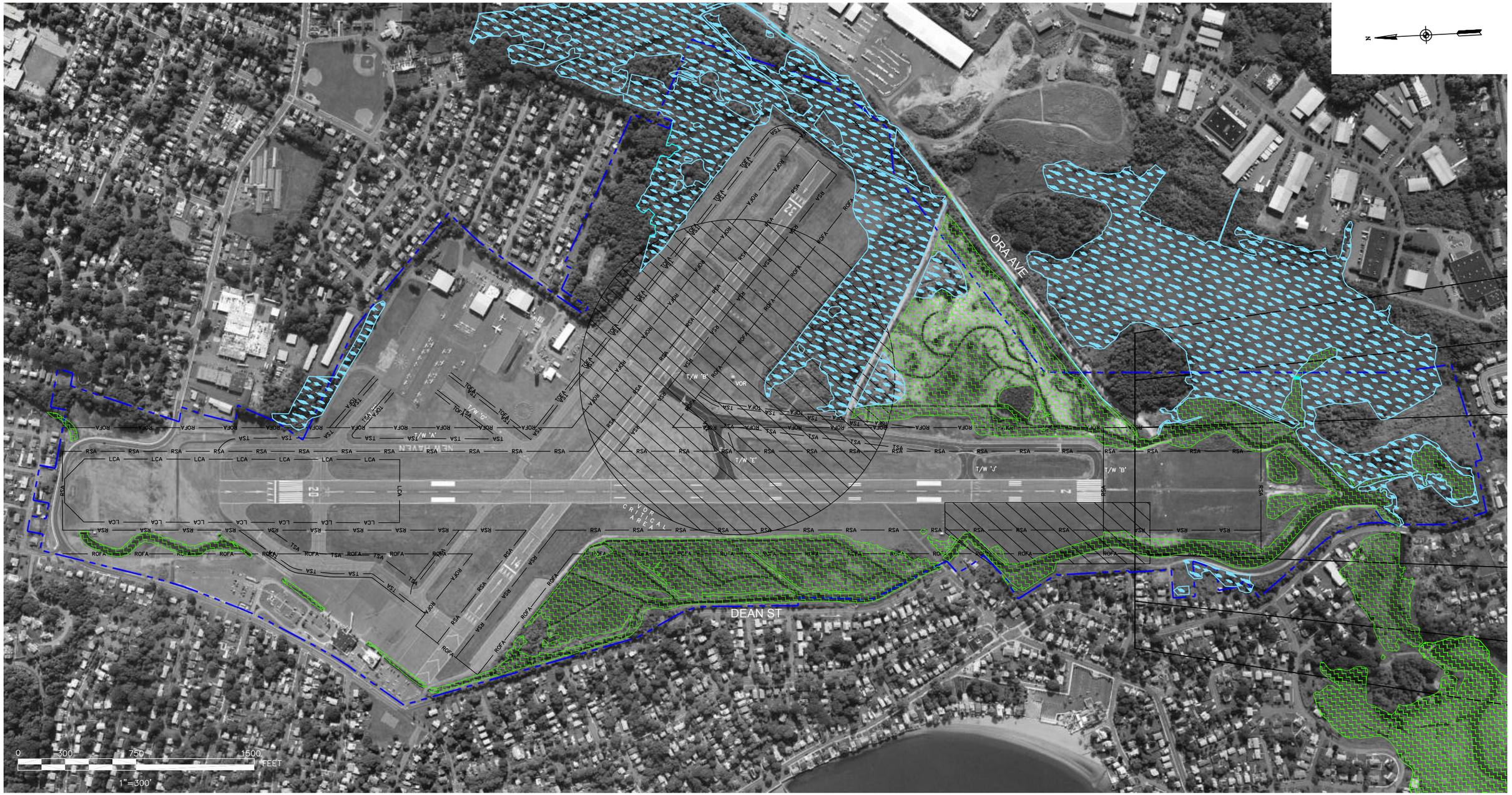
Wildlife Habitat

Terrestrial, aquatic and wetland plant communities within the project study area provide a range of importance to wildlife species which utilize the area, as detailed in the Wildlife Evaluation in Appendix E.

Developed portions of the Airport contain an area of approximately 200 acres along the runways and taxiways, while adjacent undeveloped wildlife habitat encompasses an area of approximately 550 acres. The vegetative resources within this overall area of wildlife habitat provide some or all of the life-sustaining requirements for numerous wildlife species.

Plant communities in and around the Airport provide habitat for a relatively diverse assemblage of wildlife species, particularly given the extent to which development exists in the Morris Cove/Lighthouse Point section of New Haven and the Momauguin section of southern East Haven. Overall, USDA/Wildlife Services staff has observed ten (10) species of mammals, 100 species of birds, and two (2) species of reptiles on Airport property (FAA 2012).

Collectively, the relatively diverse vegetative resources provide some or all of the life-sustaining requirements for numerous wildlife species, particularly since many of these species utilize multiple habitats during their life cycles. Species for which suitable habitat is available on and proximate to the Airport include a wide range of large and small mammals, birds of prey [e.g.



TIDAL WETLANDS DELINEATED PER CTDEEP TIDAL WETLANDS ACT AND FEDERAL JURISDICTION

INLAND WETLANDS PER CTDEEP JURISDICTION

APPROXIMATE AIRPORT PROPERTY LINE

TWEED NEW HAVEN REGIONAL AIRPORT
EXISTING WETLANDS

FIGURE 6

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

Drawing name: H:\063218\dwg\EXHIBITS\FENCE\tweed-2012-FENCE-EA-FIG6.dwg Jun 20, 2013 - 3:19pm

osprey (*Pandion haliaetus*) and Northern harrier (*Circus cyaneus*)], shorebirds [e.g. killdeer (*Charadrius vociferous*) and sandpipers], wading birds [e.g. great egret (*Ardea albus*) and snowy egret (*Egretta thula*)], Canada geese and various species of ducks and gulls, songbirds (resident and migratory), reptiles associated with upland habitats (e.g. Eastern garter snake (*Thamnophis s. sirtalis*), and reptiles and amphibians associated with freshwater wetlands [e.g. snapping turtle (*Chelydra serpentina*) and green frog (*Rana clamitans*). Finfish, such as mummichogs (*Fundulus heteroclitus*) and shellfish [e.g. oysters (*Crassostrea virginica*)] also occur in tidal waters on and offsite.

State-listed endangered/threatened species and species of special concern also utilize the Airport and surrounding habitats, as listed in Table 4-1. The listed wildlife species were observed within the Study Area over a 2-year period (1993-95) during 18 field inspections (FAA 1999). The species were confirmed based on visual confirmations and other indicators, such as vocalizations/bird calls, and the presence of feathers.

Table 4-1 State-listed Endangered and Threatened Species or Species of Special Concern

Species	Classification
Great Egret (Ardea albus)	Threatened
Snowy Egret (Egretta thula)	Threatened
Least Tern (Sterna antillarum)	Threatened
Sharp-shinned Hawk (*Accipiter striatus*)	Endangered
American Kestrel (*Falco sparverius*)	Special Concern
Northern Harrier (*Circus cyanneus*)	Endangered
Horned Lark (Eremophila alpestris)	Threatened
Northern Parula Warbler (Parula americana)	Special Concern

None of the birds listed were noted as breeding or nesting onsite at that time.

More recently, Northern harriers, great egrets, snowy egrets and American kestrels were observed on Airport property during wetland compensation monitoring activities between 2008 and the present. With the exception of the least tern and Northern Parula warbler, each of the other species listed in Table 4-1 also has been observed onsite by staff from USDA/Wildlife Services (FAR Part 139.337 Wildlife Hazard Management Plan; September 21, 2012).

Correspondence (31 October 2012) received from the CTDEEP/Wildlife Division relative to State-listed endangered/threatened species and species of special concern also noted that the aquatic diamond back terrapins (*Malaclemys t. terrapin*), a turtle species which utilizes the narrow strip of coastal habitat along ocean edges, may use areas along the Haul Road between Ora Avenue

and the airfield for nesting. To date, however, no evidence of this occurrence has been observed along or proximate to the Haul Road or anywhere else on or proximate to the Airport. This likely is due to the blockage of turtle movements upstream by the Morris Creek tide gate located downstream and west of South End Road.

4.3 Coastal Zone Management

The state agency responsible for compliance with the requirements of the Coastal Zone Management Act (CZMA) of 1972, as amended, is Connecticut's Coastal Management Program administered by CTDEEP and approved by National Oceanic and Atmospheric Administration (NOAA) through the Office of Long Island Sound Program (OLISP). The entire Airport property is located within the Coastal Boundary as established by CGS Section 22a-94, with the exception of the extreme northwestern portion of property. This portion of the airport, generally, occurs east of Burr Street between the airport entrance road and Holmes Street, west of Morris Creek/Tuttle Brook.

Within the Coastal Boundary, CTDEEP maps indicate the occurrence of a variety of coastal resources on Tweed New Haven Airport property (Appendix B). The 2002 Tweed-New Haven Regional Airport Master Plan Update documents and details these resources, thus they are only described here briefly:

- coastal land resources- modified bluffs and escarpments along the faces of Morris Cove and Morgan Point; and beaches and dunes, on the shores of New Haven Harbor and Long Island Sound
- coastal flood hazard areas- most of the site is contained within the 11-foot (NGVD) floodplain elevation, as defined by FEMA, see Section 4.4 below
- shorelands- uplands higher than the 11-foot NGVD elevation occur to the west, south and east of the Airport
- regulated tidal wetlands- these wetlands are described in Section 4.7.
- undesignated tidal wetlands- inland wetlands occur on and off the Airport
- intertidal flats- occur on most of the shoreline surrounding the Airport
- coastal waters- offshore, nearshore waters and estuarine embayments exist within the Long Island Sound just off Airport property

4.4 Floodplains

Morris Creek is the primary drainage channel in the watershed. This watercourse is tidally influenced from Morris Cove to the airport property, a distance of over 9,000 linear feet. A tide gate, 3,000 feet upstream from the mouth of Morris Creek, restricts tidal flows within Morris Creek. The watershed above the tide gate is approximately 2 square miles in area.

Tweed New Haven Airport falls within the 100-year floodplain of both New Haven and East Haven. Flood insurance studies for New Haven (FEMA Flood Insurance Administration, 1980) and East Haven (FEMA Flood Insurance Administration, 2010) indicate that the 100-year flood would inundate all areas of the airport at or below 11 ft National Geodetic Vertical Datum (NGVD). With the exception of some land north of Dodge Ave., all airport property is at elevations at or below 11 ft NGVD.

The Town of East Haven administers a Flood Damage Prevention and Control Ordinance within its jurisdictional limits. Essentially, all development within the 100-year floodplain must secure

a permit from a Flood and Erosion Control Board, a five-member board appointed by the Town Council.

The airport filed for and was approved for a Conditional Letter of Map Revision (CLOMR) in 2005, and received a Letter of Map Revision (LOMR) in 2011 for activities within the 100-year flood plain, near the site of this proposed fence installation.

4.5 Historic and Archeological

Procedures in Section 106 of the National Historic Preservation Act of 1966 and the Archaeological and Historic Preservation Act of 1974 are used to evaluate impacts to Archaeological, Architectural, and Cultural resources.

Correspondence was mailed to the Connecticut State Historic Preservation Office (SHPO) on December 3, 2012. A follow up email was submitted on December 10, 2012. The SHPO indicated receipt of the Section 106 consultation letter on December 10, 2012. A copy of the correspondence is provided in Appendix B.

Correspondence in March 18, 1996, and a March 28, 1996 response from the Deputy Historic Preservation Officer of the Connecticut Historical Commission show that the project areas do not possess archaeological integrity or sensitivity, and that the Historic Preservation Office expects that projects in the area would have no effect on historic, architectural or archaeological resources listed on or eligible for the National Register of Historic Places.

4.6 Water Quality

The stormwater associated with the airport drains Morris Creek and eventually to Long Island Sound. Stormwater maintenance is conducted in accordance with the Stormwater Pollution Prevention Plan (SWPPP).

The CTDEEP Water Quality Standards determined Coastal and Marine Waters to exist in the airport vicinity. Coastal and Marine waters are defined as waters generally subject to the rise and fall of the tide and as defined by Section 22a-93 of the Connecticut General Statutes as amended.

Surface waters in the airport area have been classified as SB/SA. This means that current water quality is classified as SB, while the water quality goal is the higher quality of SA.

The Designated Uses for "SA" waters are marine fish, shellfish and wildlife habitat, shellfish harvesting for direct human consumption, recreation, and all other legitimate uses including navigation. The Designated Uses for "SB" waters are marine fish, shellfish and wildlife habitat, shellfish harvesting for transfer to a depuration plant or relay (transplant) to approved areas prior to human consumption, recreation, industrial and other legitimate uses including navigation.

4.7 Wetlands and Surface Water

Delineation

Wetland jurisdictional boundaries were delineated to identify both inland and tidal wetlands as defined by the Connecticut General Statutes (CGS) as well as federal wetlands and navigable

waters as defined by the U.S. Army Corp of Engineers (ACOE) under Section 10 of the Rivers and Harbors Act of 1899 (Figure 6). Certain wetlands within the project boundary were delineated on December 28, 2012 and January 10, 2013 by Environmental Planning Services (EPS) at potential impact locations as shown on Figure 2.

Wetlands within or adjacent to the Airport have been identified for almost two decades for a variety of permitting efforts from a combination of aerial photography, topographical elevational modeling, and site-specific field review. The delineation used to modify portions of the existing wetland map approved by CTDEEP in 1999 for the Runway Safety and Taxiway Improvement EIS (FAA 2000) and updated in 2005 for the state and federal permitting of the Tweed Runway Safety Area Improvements was reviewed and agreed upon by the agencies involved in protecting these resources. Preliminary project plans and alternatives used this delineation for the purposes of avoidance and minimization of wetland impacts.

However, in 2012 the Connecticut General Assembly passed PA 12-101 which included a revision to the State's regulatory jurisdiction under Connecticut General Statutes (CGS) Section 22a-359. In essence, this revision changed the upper regulatory jurisdiction limit for tidal wetlands from the "high tide line" to the area up to and including the elevation of the "coastal jurisdiction line" (CJL) as determined for the State's major tidal waterbodies. The change went into effect on October 1, 2012.

The high tide line had been used as the State's coastal jurisdictional limit since 1987 and for previous permitting efforts at the Airport. The new statute requires the use of a specifically determined elevation as the regulatory limit instead of field evidence of the water surface elevation. Communication with CTDEEP Office of Long Island Sound Programs (OLISP) determined the CJL for the wetland within the Tweed Airport boundary above the tide gate on Morris Creek to be 3.5' NGVD. All wetlands below this elevation for the purpose of the project will be considered tidal, and therefore, under the jurisdiction of OLISP, while wetlands above this elevation will be considered freshwater wetlands, under the regulatory jurisdiction of the CTDEEP Inland Waters.

Federal wetlands were delineated in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0, January 2012). According to this method, three parameters must be satisfied for an area to be mapped as a wetland. These are hydric soils, hydrophytic vegetation, and wetland hydrology. Communication with ACOE regarding the delineation between freshwater wetlands and tidal wetlands on-site has indicated their concurrence with the CTDEEP CJL line of 3.5' NGVD.

Conditions

One large contiguous wetland system that borders on or drains into Morris Creek occurs on the site. This wetland has a long history of disturbance, having historically been a deposition site for dredge spoils from New Haven harbor. More recently the wetland has been transected by numerous roads, filled and channelized to accommodate development and its streams piped and re-aligned resulting in restriction of tidal flows.

Wetland habitats present include tidal and freshwater marshes, freshwater scrub/shrub, and wooded swamp plant communities. The majority of wetland areas in this system consist of tidal marsh habitat dominated by Common Reed [*(Phragmites australis)*, a.k.a. *Phragmites*]. In all areas of marsh observed, the *Phragmites* growth is extremely dense, limiting available light and space for other plant species. As a result, plant diversity in these habitats is low.

Wetland hydroperiod varies throughout the system depending on micro-topography and includes seasonally-flooded, permanently-flooded, semi-permanently flooded and seasonally saturated water regimes. However, due to the history of disturbance in this system which has raised wetland elevations, altered flows and restricted tidal flushing, tidal influence in some areas is likely limited to more extreme tidal events such as the spring tide or one-year return frequency tidal flood rather than the daily tidal sequence.

The majority of the wetlands on-site can be characterized as *Phragmites* dominated marsh with scattered scrub/shrub vegetation including Red Maple *(Acer rubrum)*, Grey Birch *(Betula populifolia)*, Highbush Blueberry *(Vaccinium corymbosum)*, Arrowwood (*Viburnum recognitum*), Poison Ivy *(Toxicodendron radicans)*, and Common Greenbriar *(Smilax rotundifolia)*. In the mowed area along the runway the extensive herb layer is largely grasses *(Poaceae spp.)*, sedges *(Carex spp.)*, with a few patches of Large Cranberry *(Vaccinium macrocarpon)*. The wooded swamps to the north of the runway and east toward Proto Drive have a tree canopy of mostly Red Maple. The shrub layer is mostly Highbush Blueberry, Sweet Pepperbush *(Clethra alnifolia)*, Spicebush *(Lindera benzoin)*, Arrowwood, Speckled Alder *(Alnus incana)*, and Willow *(Salix spp.)*. In the dormant herb layer, sedges, grasses, and Cinnamon Fern *(Osmunda cinnamomea)* are present.

4.8 Secondary and Cumulative Impacts

To complete the cumulative analysis for this project, critical background information of past, present, and reasonably foreseeable future actions must be reviewed. Cumulative effects may result from individually minor but collectively significant actions taken place over a period of time. Due to the limited location of the proposed activities, in combination with security and access concerns regarding airport-owned lands, the cumulative effects analysis is limited to the property directly affected by the proposed project.

The most recent airport development project was the safety area improvements to Runway 2-20 and the extension of Taxiway B on the southeast side of Runway 2-20. Refer to the *Runway Safety Area and Taxiway Improvements Final Environmental Impact Statement Final Environmental Impact Evaluation*, May 2000. There are no reasonably foreseeable future activities planned by the Airport at this time.

5. ENVIRONMENTAL CONSEQUENCES

5.1 Environmental Consequences Evaluation Process

In this chapter the impact of the proposed action, and, where necessary for comparison, the action alternative are described in detail for each environmental impact category identified in Chapter 4, Affected Environment. The cumulative impact of the proposed action is determined by the significance and duration of these impacts in conjunction with impacts from previous projects.

5.2 Biotic Resources

The length of the fence, the footprint of the affected area, and the impacts to biotic resources would be significantly minimized by implementing Fence Alignment #3.

Vegetation

Installation of the fence would create minor impacts to upland and wetland vegetation. The action alternatives would affect these resources. Vegetation would be cleared 15 feet on both sides of the fence alignment corridor and permanently maintained either by using small equipment or hand clearing in order to keep the fence visible and reduce maintenance. In upland areas, trees would be cut, the stumps ground to 4" below grade and the former stump area would be seed. Trees and overhanging branches would be trimmed in all areas of fence installation to reduce the potential attraction for wildlife to use as assistance in crossing the fence.

In wetland areas, minimal impacts would occur from vegetation removal and fence installation. In wetland areas, low bearing pressure (tracked) equipment would be used to access the fence alignment. Poles would be pile-driven as depicted in the photo provided. All vegetation would be cut flush to the ground. In many cases, the vegetation to be removed would be *Phragmites*, which is a non-native invasive species with little wildlife habitat value. Long-term vegetation management would occur within wetland areas along the fence corridor and would be conducted in a similar manner as initial removal using the least impacting methods.

Mitigation

In order for any fence alignment to be installed, maintained and remain visible, vegetation would need to be cleared and controlled. The placement of pilings, such as the proposed fence posts/poles, would not have the effect of a discharge of fill material, as described and documented in ACOE Regulatory Guidance Letters (RGL) 88-14 and 90-08, as well as ACOE regulations at 33 CFR 323.3(c). In accordance with Section 10 of the Rivers and Harbors Act, a permit would be required for placement of structures (the poles) within the navigable waters

below 3.5' NGVD. Per CTDEEP Inland Waters and OLISP, the placement of fill material in wetlands would be limited to the footprint for the fence poles and the 2-ft wide fence skirt.

Mitigation would be established as a condition of agency permits. Due to the potentially lengthy nature of obtaining a permit from ACOE, these impacts would occur in Phase 3 of the project as outlined in Section 3.1.

Wildlife

Installation of a fence would impact wildlife. Significant areas of existing habitat would be removed for future use to individual medium- to large-sized mammal species (such as deer, coyote, raccoon, opossum, red fox, and striped skunk). However, impacts to these individuals would not significantly affect the overall population in this region, which would be anticipated to stabilize over time. The proposed actions also would not result in a trend toward federal/state listing of these species or a loss of viability within the region of southern coastal Connecticut. The action alternatives would affect these resources.

A Wildlife Evaluation was conducted on the Airport property by Marshall Dennis, a Certified Professional Wetland Scientist and Wildlife Biologist with 35+ years of experience throughout the Northeast and Mid-Atlantic States. Detailed discussion of existing wildlife habitat and usage within the proposed impact areas, as well as an analysis of potential impacts, is presented in Appendix E and summarized here. The activity patterns and population dynamics of small-sized mammals (e.g. shrews, voles, moles, mice and rats), as well as reptiles, amphibians and fish populations, are not likely to be disrupted by the proposed action due to the relatively small home ranges characteristic of these species.

Developed portions of the Airport contain an area of approximately 200 acres along the runways and taxiways, while adjacent undeveloped wildlife habitat encompasses an area of approximately 550 acres. With the exception of small-sized mammals noted above that are small enough to enter the site via gates and/or other similar structures, the installation of the proposed Fence Alignment #3 would effectively preclude access by non-avian wildlife to approximately 324 acres of land primarily consisting of maintained ground (~200 acres), and a ~124-acre mixture of more naturally occurring uplands and freshwater wetlands, as well as tidal habitats associated with the Ora Avenue and Dean Street wetland restoration areas. Thus, of the 750 acres of land presently serving as wildlife habitat, approximately 426 acres would remain as available habitat (outside the fence) to non-avian, medium- to large-sized species following fence installation, an overall reduction of approximately 43%.

Fence Alignment #1 would exclude approximately 340 acres from wildlife use, a slightly larger area than Alignment #3. Alignment #2 would exclude approximately 245 acres from such wildlife. While Alignment #2 would leave a larger area of wildlife habitat available outside of the fence, this alternative would impact a significantly larger area of jurisdictional tidal and freshwater wetlands, as detailed in Section 5.7.

Existing non-avian wildlife populations would be confined to a smaller and modified landscape of undeveloped lands surrounded primarily by residential and industrial land uses. Remaining undeveloped lands would not simply be a proportionate reduction of presently available habitats that theoretically would lead to a proportionate decrease in the number of individuals of each species. Relatively high quality freshwater and tidal wetlands would be fenced off and no longer be available to large- and medium-sized non-avian wildlife. The habitats actually remaining for use by wildlife would consist of vast expanses of degraded wetlands dominated

by invasive common reed (*Phragmites australis*), especially south of Morris Creek. The availability of woodland habitat also would be notably reduced.

These habitat conditions would not be able to sustain the same or similar number of individuals. Instead, the diminished extent of available habitat would result in the carrying capacity of these lands for wildlife to be exceeded, leading to some wildlife mortality. Some individuals, white-tailed deer and coyotes, for example, may attempt to seek more suitable habitat elsewhere, such as within the Farm River watershed. It is probable, however, that the carrying capacity for such species in this area already has been attained, thereby leading to the mortality of migrating individuals, emigration, and alterations to the composition of wildlife populations in the subject area.

The exclusion of previously available habitat also is expected to increase wildlife/human interactions, including but not necessarily limited to wildlife consumption of vegetation within residential areas. The disturbance of outdoor refuse containers by wildlife in search of food also is expected to increase, as is pet predation primarily by coyotes. In addition, fencing may result in residential areas in the vicinity of South End, Silver Sands, Minor and Roses Farm Roads being used as wildlife travel corridors, particularly since this area represents the shortest distance between available habitats north, south and west of these residences.

To place these impacts in perspective, none of the large- to medium-sized mammals found on the airport during wildlife surveys by USDA/WS are unique, and in many cases, are considered "nuisance" species to the local human population. Many of the mammal species found on-site, including deer, coyote, raccoon, skunk and foxes, are harvested during regulated hunting and trapping seasons in Connecticut providing recreation for sportsmen and controlling local populations. Deer and coyote populations in Connecticut have grown significantly in the past few decades (CTDEEP 2012). Both species have a high reproductive potential and few natural predators and, thus, existing populations have the potential to increase rapidly. High deer populations can significantly alter forested habitats reducing plant diversity and habitat suitability for other wildlife species. CTDEEP recommends the use of regulated and controlled hunts to effectively and efficiently reduce and maintain deer populations in balance with public expectations and habitat carrying capacities.

Mitigation

The purpose of this document, as part of the NEPA process, is to allow the FAA to fully consider the impacts a project would have on the natural, human and social environment. CEQ guidance specifically states agencies must take a "hard look" at the impacts of the proposed action and alternatives.

In order to successfully meet the purpose and need of this project, the Airport must fence in some or all of the existing wildlife habitat. The least environmentally damaging practicable alternative (LEDPA) is anticipated to be the Fence Alignment #3. However in terms of wildlife impacts, any alternative which requires installation of a fence would limit habitat use from individuals currently using these areas. The overall human impact resulting from not implementing this project could be overwhelming in terms of financial cost and human life liability.

5.3 Coastal Zone Management

*Minimal and temporary impacts are anticipated to resources regulated by the applicable standards and policies of Part VII of the Connecticut Coastal Management Plan, and Section 307(c)(1) of the Coastal Zone Management Act of 1972, Subpart C of 15 CFR Part 930, as amended. T*he action alternatives would affect these resources. Coordination with the Office of Long Island Sound Program (OLISP) has been initiated and has been incorporated into the fence design, installment procedures and potential alignment corridors to ensure impacts to coastal resources are minimized and avoided to the extent practicable. Coordination letters can be found in Appendix B.

Mitigation

Mitigation for impacts to coastal resources includes design analysis to avoid and minimize impacts to these resources to the extent practicable.

5.4 Floodplains

Impacts to the 100-year floodplains within the Airport property would be minimal, temporary and mitigated via use of Best Management Practices (BMPs) and Connecticut Guidelines for Erosion and Sediment Control. The action alternatives would affect these resources. The proposed fence alignment and maintenance access corridor will be too small in scale to have an effect on the 100-year flood plain; however it may have the potential to change the hydraulic characteristics of the marsh area in smaller inland and tidal events. This would be avoided by designing the access corridor with proper culvert design and profile grades that mimic the natural environment and the use of BMPs where necessary and prudent.

5.5 Historic And Archaeological

The proposed project would not impact historical and archaeological resources. The FAA is responsible for determining if the proposed project would affect any historic properties or areas of archaeological sensitivity. There are no historic properties or areas of archaeological sensitivity within the project area. The Tweed New Haven Airport Authority and the FAA expects that the project would have no effect on historic, architectural or archaeological resources listed on or eligible for the National Register of Historic Places. See Appendix B for documentation.

The FAA requested input from the Indian Nation as shown in Appendix B and the Nation will be informed of any artifacts revealed during construction of improvements.

5.6 Water Quality

Impacts to water quality would be minimal, temporary, and mitigated via use of Best Management Practices (BMPs) and Connecticut Guidelines for Erosion and Sediment Control. The action alternatives would affect these resources. The potential to impact water quality increases in the event of ground disturbance due to sedimentation caused by erosive forces. This potential would be mitigated by best management practices such as erosion control and soil stabilization using native seeding or other approved means listed in the previously approved the ACOE Wetlands Compensation Plan, Table 2-V FAA Approved Warm Season Grasses. The extent of soil disturbance will be limited during construction.

5.7 Wetlands and Surface Waters

Impacts to wetlands and surface waters will be minimal. The action alternatives would impact freshwater and tidal wetlands on-site. The fence would be constructed within a 30-foot wide access corridor to allow access for inspection and maintenance; in locations within wetlands, the fence corridor would only allow clearing and vegetation removal via the use of small equipment and on foot. Brush and trees would be cut flush with the ground and mowed or cleared by hand.

As shown in Table 5-1, the proposed wetland impacts for Fence Alignment #3 are significantly reduced from the potential wetland impacts for either Fence Alignment #1 or Fence Alignment #2.

Table 5-1 Wetland Impacts by Alternatives

Alternative	CTDEEP Inland Wetlands Impacts (sq ft/acres)		ACOE/OLISP Wetlands Impacts (sq ft/acres)		Total Jurisdictional Impacts (sq ft/acres)	
	Permanent	Secondary	Permanent	Secondary	Permanent	Secondary
Alignment #1	5,423/ 0.12	90,784/ 2.08	1,250/ 0.03	23,726/ 0.54	6,663/ 0.15	114,510/ 2.63
Alignment #2	1,310/ 0.03	41,066/ 0.94	8,623/ 0.20	124,348/ 2.85	9,933/ 0.23	165,414/ 3.80
Alignment #3	3,901/ 0.09	64,761/ 1.49	1,154/ 0.03	23,998/ 0.55	5,055/ 0.12	88,759/ 2.04

State-Regulated Wetland Impacts

As determined by CTDEEP and OLISP, permanent wetland impacts regulated by CTDEEP and OLISP would be minimal and limited to the footprint of the fence poles, and the area covered by the 2-foot wide fence skirt. Details are shown on the Fence Design Graphic in Appendix C. Within both freshwater and tidal wetlands, Fence Alignment #3 would result in approximately 3,901 sq ft (0.09 acres) of permanent wetland impacts. Poles would be hydraulic ram driven, not cemented in place. This is typically done with a hydraulic hammer/ram attachment mounted on a low pressure track mounted skid steer.

The clearing or removal of vegetation for development of the access corridor, as well as long-term vegetation cutting/removal for maintenance of the fence and access corridor to allow for structural upkeep and visibility, would be considered a secondary impact by these agencies. Fence Alignment #3 would create secondary wetland impacts of approximately 64,761 sq ft (1.49 acres); this value may differ slightly due to changes from site-specific field conditions during fence installation.

Federally-Regulated Wetland Impacts

As noted in prior sections, the placement of pilings, such as the proposed fence posts/poles, would not have the effect of a discharge of fill material, as described and documented in ACOE Regulatory Guidance Letters (RGL) 88-14 and 90-08, as well as ACOE regulations at 33 CFR 323.3(c) and as such are not considered a permanent impact in freshwater wetlands. ACOE Section 404 permit and wetland compensation would not be required. However, per Section 10 of the Rivers and Harbors Act, installation of the fence poles in navigable waters below 3.5'

NGVD would require a permit from ACOE. Fence Alignment #3 would create approximately 1,154 sq feet (0.03 acres) of permanent impacts in navigable waters.

The clearing or removal of vegetation for development of the access corridor, as well as long-term vegetation cutting/removal for maintenance of the fence and access corridor to allow for structural upkeep and visibility, would be considered a secondary jurisdictional impact by ACOE within the jurisdictional areas below elevation 3.5' NGVD. Fence Alignment #3 would create secondary wetland impacts of approximately 23,998 sq ft (0.55 acres); this value may differ slightly due to changes from site-specific field conditions during fence installation.

Mitigation

Mitigation via design modification of the fence alignment must demonstrate 1) the impacts are unavoidable; 2) the adverse impacts, including specific impacts on coastal resources, navigation and water-dependent uses have been minimized to the greatest extent practicable; 3) the scope and extent of encroachments into tidal, coastal or navigable waters have been minimized to the greatest extent practicable; 4) any remaining adverse impacts are acceptable and consistent with applicable statutory standards; 5) and alternatives with the least adverse impact has been presented. Wetland avoidance and minimization measures have guided the design of the fence and the alignment of the corridor.

The impacts within navigable waters under the jurisdiction of the ACOE would require a permit. Mitigation would be established as a condition of this permit. Due to the potentially lengthy nature of obtaining this permit, fence installation and its resultant impact to lands subject to ACOE regulation under Section 10 of the Rivers and Harbors Act and CTDEEP OLISP jurisdiction would occur in Phase 3 of the project as outlined in Section 3.1.

5.8 Secondary and Cumulative Impact Analysis

Cumulative effects may result from individually minor but collectively significant actions taken place over a period of time. Mitigation for the previous improvements to the airport reduces the effect of cumulative impacts. The most recent airport development project was the safety area improvements to Runway 2-20 and the extension of Taxiway B on the southeast side of Runway 2-20. Refer to the *Runway Safety Area and Taxiway Improvements Final Environmental Impact Statement Final Environmental Impact Evaluation, May 2000*. This document describes the 5-step mitigation program intended to restore conditions favorable to low marsh environment.

6. LIST OF AGENCIES CONTACTED AND PERSON CONSULTED, EA PREPARERS

The following were contacted during the environmental analysis process and provided materials, comments or information that was incorporated into the EA.

AGENCY/ORGANIZATION	CONTACT
Connecticut Department of Energy and Environmental Protection (CTDEEP) Bureau of Water Protection and Land Reuse	Mr. Brian Thompson
CTDEEP Wildlife Diversity Program	Ms. Jenny Dickson
U.S. Fish and Wildlife Service (FWS)	Ms. Susi von Oettingen and Mr. Brett Hillman
Connecticut State Historic Preservation Office (SHPO)	Mr. Daniel Forrest
USDA, APHIS, Wildlife Services	Mr. Timothy S. Cozine
U.S. Army Corps of Engineers (ACOE)	Ms. Susan Lee, Ms. Barbara Newman, Mr. Mike Sheehan
CTDEEP Inland Water Resources Division	Ms. Cheryl Chase, Ms. Sharon Yurasevecz, Mr. Doug Hoskins
CTDEEP Office of Long Island Sound Programs (OLISP)	Mr. Kevin Zawoy
Hoyle, Tanner & Associates, Inc.	Mr. Robert Furey, P.E., Mr. Tim Audet, P.E., Ms. Kimberly Peace, Mr. Evan McDougal, C.M.
Wetlands & Wildlife, Inc.	Mr. Marshall Dennis
Environmental Planning Services, LLC	Mr. Michael Klein, CPWS

7. REFERENCES

CTDEEP 2012. Connecticut Department of Energy and Environmental Protection (CTDEEP) website Coyote Fact Sheet: http://www.ct.gov/dep/cwp/view.asp?A=2723&Q=325992 accessed January 20, 2012.

CTDEEP website, White-tailed deer Fact Sheet:
http://www.ct.gov/dep/cwp/view.asp?A=2723&Q=326112
Accessed January 20, 2012.

Dasmann, Raymond F. 1964. *Wildlife Biology*. John Wiley & Sons, Inc. New York, NY.

FAA 2012. Federal Aviation Administration (FAA) Tweed New Haven Regional Airport Wildlife Hazard Management Plan. Burlington, MA.

FAA 2002. FAA and Connecticut Department of Transportation (Conn DOT) Tweed-New Haven Regional Airport Master Plan Update 2002. Burlington, MA.

FAA 1999. FAA and Connecticut Department of Transportation (Conn DOT) Final Environmental Impact Statement (FEIS) for Tweed-New Haven Airport Authority, Burlington, MA.

Appendix A:

USDA Wildlife Services

United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife Services
463 West Street
Amherst, MA 01002

Lori Hoffman-Soares, Airport Manager
Tweed New Haven Regional Airport
155 Burr Street
New Haven, CT 06512

September 4, 2009

Dear Ms. Hoffman-Soares,

Thank you for requesting U.S. Department of Agriculture, Wildlife Services' (USDA, WS) assistance at Tweed New Haven Regional Airport, to reduce the wildlife threat to human health and safety and aircraft. This letter is in response to your request for additional information regarding fencing at Tweed New Haven Regional Airport.

Upon the initiation of the Wildlife Hazard Assessment (WHA), WS noted that Tweed New Haven Regional Airport is only partially fenced and that some of the existing perimeter fence was in poor condition. Both circumstances allow wildlife such as deer and coyotes easy access to the airfield. Areas lacking a perimeter fence use wetlands as the barrier to keep out people and wildlife. However, most terrestrial animals will easily pass across this barrier. WS observed high numbers of deer and coyotes on the airfield during the surveys conducted for the WHA. Deer and coyote pose a significant hazard to aircraft. WS recommended to the airport to address problems with the perimeter fence to prevent access by deer and coyote in the WHA.

WS observed that areas of the perimeter fence are overgrown with vegetation and are only five feet high, which is not a recommended height to prevent access by wildlife such as deer. Vegetation covered fence line allow deer to judge the height of the fence to jump it and the vegetation creates a bridge over barbed wire for species that climb such as red fox or raccoon. Vegetation growing through a fence can push it up enough to allow wildlife to pass under. Studies have found that a white-tailed deer will readily pass under an opening 25 cm (approximately 11 inches) high, and when sufficiently motivated will pass through an opening 19 cm (approximately 7.5 inches) high beneath a fence. WS recommends an eight foot fence with three strands of out-facing barbed wire. A portion of the fence should be buried or a skirt of trap rock should be installed to prevent infiltration by coyote. There should be at least a fifteen (15) to thirty (30) foot buffer on each side of the fence to prevent wildlife such as deer from judging the height of the fence and jumping over it.

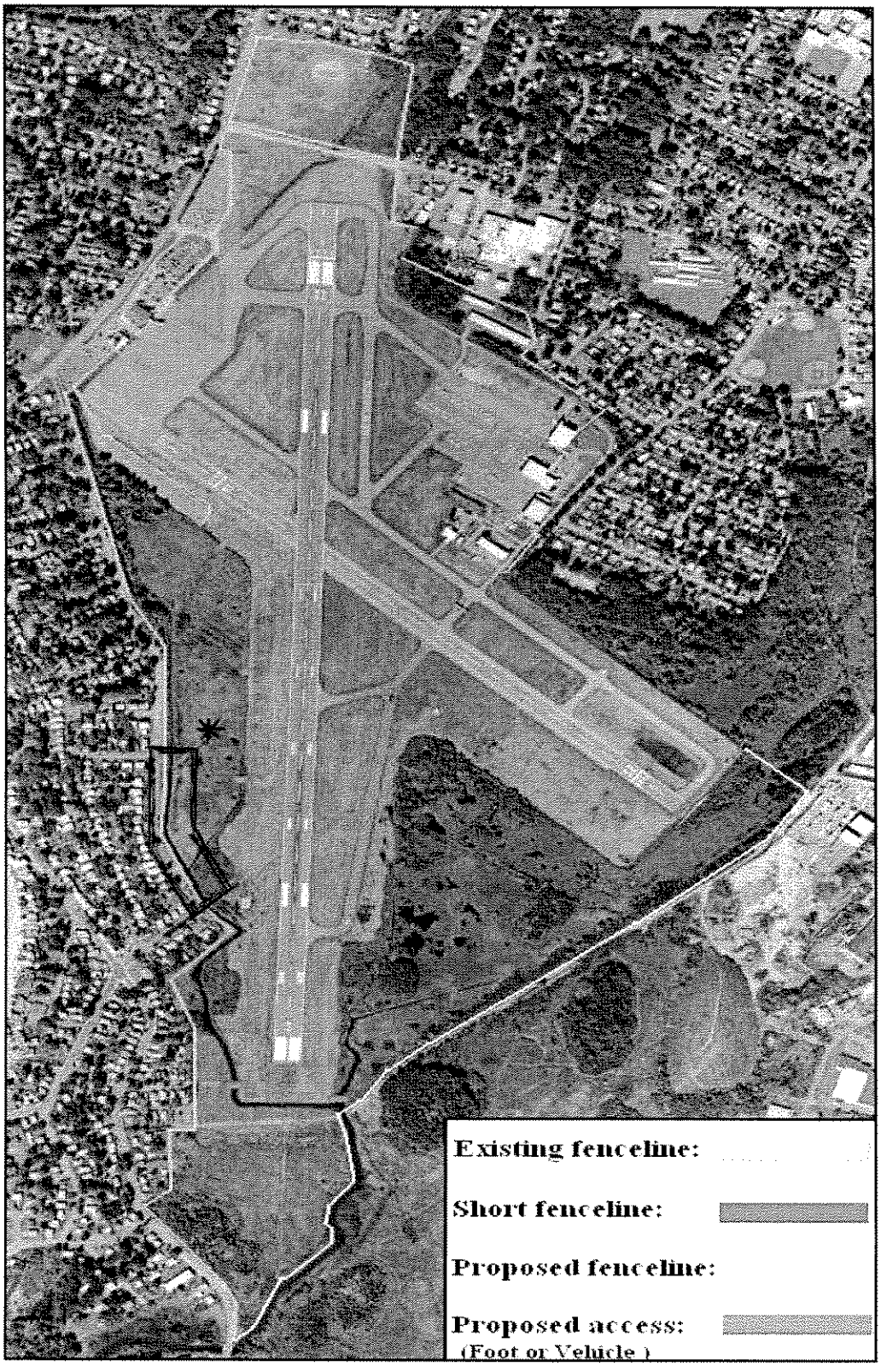
WS recommends the following actions be completed on your airfield. All areas of the perimeter fence that are inadequate in height should be removed and replaced with fencing of appropriate height to prevent access by wildlife. Fence line that is of proper height with three strands of barbed wire should be cleared of all vegetation and maintained with a buffer strip along each side of the fence. All dig outs should be repaired by filling in the gap with crushed stone or by burying a skirt to prevent future dig-outs. All gaps in the gates of the perimeter fence should be repaired to prevent access by wildlife. The rest of the airfield currently not fenced should be completely

enclosed so as to not obstruct aviation equipment and/or flight lines. Attached to this letter is an image WS generated for the WHA to recommend a perimeter fence line that should minimize affects to aviation equipment and/or flight lines. In areas that have potential conflicts with aviation equipment, fences can be constructed of materials that eliminate interference. Fences can also be angled to prevent obstructions to the flight line. Areas that WS recommended to be fenced are wetlands and permits may need to be obtained for the construction of fencing and buffer strips in these areas. However, fencing recommendations in wetland areas can be modified to and relocated to alternate locations to best suit the airport.

If you have any further questions, please feel free to contact me.

Thank You,

Adam A. Maikshilo
Wildlife Technician
USDA/APHIS/Wildlife Services
Office: (413) 253-2403 Mobile: (413) 687-4108
Adam.A.Maikshilo@APHIS.UDSA.GOV



* CURRENT 8' SECURITY FENCE PROPOSAL ALONG WESTERN EDGE OF DEAN ST MITIGATION AREA, APPROX 1100 LF

Tweed – New Haven Regional Airport
Department of Airport Operations and ARFF
155 Burr Street | New Haven, CT 06512
203.466.8844 | hvnops@flytweed.com

Incident Report Form

Name of Reporter: Chris Donlon

Title: Lead Airport Operations and ARFF Supervisor

Date and Time of Incident: 9/20/2012 at approximately 1402L

Subject of Incident: Wildlife Strike (Deer)

Persons Involved (Non-Airport Employees):

- **Contact Info:**
  - **Name:** Captain Eoin Teevan, certificate number: CA752151
  - **Company:** Fox Flight
  - **Address:** 3062-11 Lakeshore Blvd. West, Toronto, Ontario, M8V 4C9 Canada
  - **Phone Number:** 1-647-285-7873
- **Contact Info:**
  - **Name:** First Officer, Maxim Tkatch, certificate number: CA757075
  - **Company:** Fox Flight
  - **Address:** 3062-11 Lakeshore Blvd. West, Toronto, Ontario, M8V 4C9 Canada
  - **Phone Number:** 1-416-833-9584
- **Contact Info:**
  - **Name:** Owner/President, David Fox
  - **Company:** Fox Flight
  - **Address:** 3062-11 Lakeshore Blvd. West, Toronto, Ontario, M8V 4C9 Canada
  - **Phone Number:** 1-416-203-3433

Incident Details:

On September 20th, 2012 at approximately 1402L, a Lear Jet 36 (Registration # C – FEMT) struck one deer on takeoff run on Runway 20. Air Traffic Controller Jan "Walter" Jurczyszak (WJ) cleared C – FEMT for takeoff. WJ later reported he did not notice the deer.

Airport Manager, Lori Hoffman-Soares (LHS) and Assistant Airport Manager, Diane Jackson (DJ) were outside the Administration Building when LHS witnessed a Lear Jet cutting power and animal debris flying in the air and another animal running into the wooded area west of RWY 20, south of RWY 14. Lead Airport Operations Supervisor, Chris Donlon (CD) and Airport

Operations Supervisor Alicia Seremet (AS) were notified immediately of the strike via Airport Manager Lori Hoffman-Soares (LHS) and responded to the scene. Upon arrival on scene, the deer was severed into two pieces. One piece was located on the south hold short line for Runway 14 on Runway 20. The second piece was discovered 400 feet south near the Taxiway Echo intersection. CD closed both Runways at 1405L in order to safely clean up the remains. Maintenance Supervisor Pat Rubino (PR) along with three other maintenance workers responded to the scene to assist in the cleanup efforts.

LHS and DJ responded to the East Ramp where the aircraft and passengers were located. LHS and DJ met the Captain and the First Officer where they gathered initial information to include their statements and names. Mr. Eoin Teevan (ET) was the Captain and Mr. Maxim Tkatch (MT) was the First Officer flying a medical patient from Yale-New Haven Hospital to Saudi Arabia via Goosebay, Canada with a total of 5 souls on board. ET reported that on takeoff run at approximately 100 knots on Runway 20 they noticed two deer to the right side of the aircraft traveling eastbound. ET reported, upon noticing the two deer, they moved the aircraft to the left, and slammed on the brakes in an attempt to avoid the animals. One deer struck the right wing near the fuselage, and dented the wing. It also damaged the right main landing gear to include the landing light. ET was able to come to a safe stop, and taxi the aircraft safely back to the ramp. No injuries were reported as a result of the incident.

Once initial information was taken, LHS went on-board the aircraft to evaluate the situation for medical attention of the passenger and DJ called the FAA Regional Ops Center in Burlington, MA. DJ reported the basic information to Gabe and was told that a FSDO Inspector would be getting back to her shortly with more information. Shortly thereafter, Manoli Papagianneris (MP) from FSDO called inquiring for further information including crews names, initial statements from them and aircraft information and initial assessment of damages were given to include right wing damage and landing gear. They were informed that both Runways were closed while initial photos and cleanup efforts were being completed. They requested that we share photos taken for them when they arrive and would let us know if anything further was required. Immediately following the call with FSDO, DJ called USDA contact, Jamie Streeter, to notify them that we had had a strike and request a site visit. Upon a return call they confirmed they would be at HVN Friday morning to complete a full site visit and report the findings. LHS, called for a medical response and an ambulance to bring the patient back to Yale until alternate arrangements could be made for the passenger. US Customs followed by EHFD arrived on scene to clear and evaluate the passengers and verified that there was an ambulance coming for transport as well.

Cleanup included A) hosing down the incident scene with multiple tanks of water and B) burying the deer at the dumpsite to alleviate further wildlife hazards. CD conducted a final safety sweep of both Runways, and opened them back up at 1422L. Runway 02 was closed for only 20 minutes.

CD spoke with the pilot-in-command Mr. Eoin Teevan (ET). ET reiterated the statement above that he and MT told DJ earlier.

A wildlife strike report was submitted to the FAA (report number 2012-9-20-154214) by CD, and numerous pictures were taken.

Applicable procedures: Airport Certification Manual, Section 19 Wildlife Hazard Management

Supervisor Notified? Yes

If yes, who: DJ communicated throughout incident via phone.

Pictures Taken? Yes

If so, how many and save location: 15, Operations cell phone and e-mail

Appendix B:

Agency Correspondence

EAST HAVEN TOWN COUNCIL
SPECIAL MEETING MINUTES
THURSDAY, DECEMBER 13, 2012

The East Haven Town Council held a special meeting Thursday, December 13, 2012, at 7:15 PM at the East Haven Senior Center, 91 Taylor Avenue, East Haven, CT 06512.

Chairman Richard Anania calls the meeting to order at 7:29 pm.

Item #1

Roll Call- 9 present- 6 absent (Gravino, Sand, Esposito, Badamo, Riolino and Carbo)
A quorum is present.

Item #2

To consider and act upon a Resolution authorizing Mayor Joseph Maturo, Jr. to execute, on behalf of the Town of East Haven and the East Haven Town Council, a License Agreement between the Town of East Haven and the Tweed New Haven Airport Authority to allow the Authority to construct a fence on Town property to keep animals and trespassers from entering the airport property and interfering with airport operations.

Councilman Joseph Santino makes a motion.
Councilman Robert Cubellotti seconds the motion.

- Attorney Alfred Zullo- Assistant Town Attorney addresses the Council. Mr. Zullo states that he was contacted by Attorney Manke who represents the Airport Authority who indicated they have a mandate from the FAA to construct a fence due to an increased population of deer migrating into the area. One of the deer got into an accident with a layer jet, one which was carrying a passenger who was quite ill. DEEP has told them that the fence cannot be built on their land, so they are asking if they can use the Town's land to build the fence. The Town would retain ownership over the land, we would be giving them a license to construct the fence and to go onto the property and maintain the fence at their own expense. We still have the right to go onto the land for any purpose we may need it for such as road work, embankments, etc. He states that he knows the Council has questions about the brook and the trees that have been taken down, but it is important to understand the nature of the mandate from FAA. Mr. Zullo states that Attorney Manke is here to discuss anything beyond what he has.

- Attorney Hugh Manke of New Haven, representing Tweed New Haven Airport Authority. Mr. Manke states that they have a narrow strip of land that works nicely for a fence along Ora Avenue. They have created a marsh land in that area, there are tide gates, finger rivers or creeks in which tidal waters can flow. After spending a great deal of money creating this tidal marsh land, DEEP does not want them to put a fence there and the Army Corp is waiting on this as well. The FAA is stating that there is a danger out there with the increased deer population so it needs to be done right away. They are asking for the Councils help tonight in letting them put forth the solution by providing them a license to construct a fence on Town property. He explains that Ora Avenue does not have many people traveling down it that far, there is not much going on. The strip of land is very narrow; there is only several hundred feet. The fence would go in that area. They would grant access to the Town should it want access to that land. He explains that they would take responsibility of maintaining the property between Ora Ave and the existing Airport property which is all of the licensed area. Through the TSA and FAA they have responsibility to maintain that and ensure safety, they are going to need to patrol it on a regular basis, there will be more activity on Ora Ave. Mr. Manke explains that there was an agreement about three years ago between the City of New Haven, the Town of East Haven and the Airport Authority to do various things, as an Authority they were given the responsibility to remove trees that are in the clear zones near the runways. The trees are causing safety and operational problems for the aircraft getting in and out. There was an agreement that they would buy land from the Town of East Haven which they did for $1.5 million and the Town would do various things and the Authority would do other things part of which is removal of trees, it was done for safety reason at their expense.
- Councilman Santino requests a copy of this agreement to which Attorney Joseph Zullo states there is a copy of this agreement on file. Mr. Santino states that 5 acres of trees were taken down on the Town of East Haven's land and some of it was not near the flight path. Mr. Manke states that the Airport manager is here and could probably explain it better but the flight path is in a trapezoidal manner so it gets pretty wide. Attorney Alfred Zullo states that the trees were not removed as part of the fence project.
- Councilman Fred Parlato asks why the Town Engineer is not at the meeting. He recognizes the need for it for safety reasons but for something of this magnitude the Town Engineer should be here to tell us that this is in compliance, it won't cause problems with drainage or anything else.
- Mr. Manke states that they do not have the final design of the fence, but they are on a time constraint for this. Each day without a security fence is another day there could be an accident.

- Councilman Santino states that there are drainage problems; the brook down there drains Coe Avenue, Hemingway Avenue, Prospect, Kenneth Street and that entire area.

Councilman Robert Parente makes a motion for a five minute recess.
Councilman Santino seconds the motion.
Voice vote- all in favor- none oppose- none abstain. Motion carries.

Chairman Anania calls the meeting back to order at 7:45PM.

Attorney Joseph Zullo states that he put a call into Town Engineer Kevin White but he is unable to make it to the meeting. He recommends that at the least they do not table it, approve it subject to a satisfactory explanation from Kevin White either by addressing the Council at the next meeting or issuing written notice that it is in compliance.

- Chairman Anania states that Councilman Mansi brought up a good point that this is the first time they are hearing about this, if this fence was something that would have to be done, why are we just finding out about this tonight.
- Mr. Manke explains that September 20th is when the accident occurred, the FAA immediately investigates an accident. When they realized the cause of it was a large population of deer, they decided the fence had to be put in so they have been all over the Authority to respond as soon as possible and they need the Council's approval to take the next step.
- Councilman Anthony Purificato states that they could have come to the Council a month ago when they began drawing it out.
- Councilman Santino states that the Authority was planning on putting it on their property until they were told they couldn't, so there was a time lapse there.
- Mr. Manke explains preliminary designs were done, there isn't a final survey but they have a good idea of location. Attorney Al Zullo explains that he also couldn't begin working on the agreement until the preliminary plans were given to him.
- Councilman Parlato asks if they are still in the preliminary designs or if that is done, Mr. Manke states the preliminary designs are in. Mr. Parlato states that the best way to go is if voted on tonight there would have to be approval from the Town Engineer to make sure there are no conflicts with future or existing facilities within the designated area for the fence.
- Chairman Anania asks if the Authority is flexible if the Town Engineer says the given section is not good for the fence.
- Mr. Manke explains that there is a sewer line there, so there are limitations as to where the fence can be placed; there are tough graphical features that are

essential in. Engineer Bob Sherry states that he would imagine the concern would be for the sewer line, there is a drainage ditch there. They would like to put the fence another 5 or 10 feet beyond the sewer line that is owned by the Greater New Haven Water Pollution Control Agency but there is no room because it starts to go down to the ditch line. He explains the best place to put it is on high ground, away from the sewer. He feels like this is in the right spot, but they do have flexibility.

- Councilman Santino states as you come down Proto Drive the brook goes in further; it is 50 feet from the road. Mr. Sherry explains they will have to cross one time.
- Councilman Anthony Mansi asks Anthony Purificato if in working in the Animal Control unit there have been notifications of problems in that area. Councilman Purificato states no, but there are not residents that would be calling it in. Councilman Santino states he is down there four times a week and there are a ton of deer there and it would be a safety issue. Councilman Depalma also states that it is a safety issue.
- Councilman Parlato asks what steps will be taken to get the deer out when the fence is erected; they ensured that the deer will be out.
- Councilman Richardson asks will there be gates in the fence since the Town will have access to the area. Mr. Sherry states they would be able to get to the ditch and the sewer line which is before the fence begins, but there wouldn't be anything to want to get to on the other side. There are access gates at the end of the runway.
- Attorney Al Zullo makes sure that they are okay with it as long as they maintain the ditch; this will be amended into the agreement.

Roll call: 8 in favor- none oppose- 1 abstention (Mansi). Motion carries.

Item #3

Councilman Purificato makes a motion to adjourn.
Councilman Richardson seconds the motion.
Voice vote: all in favor- none oppose-none abstain. Motion carries.

Meeting is adjourned at 7:58 PM.

Respectfully Submitted,

Danelle Feeley, Clerk, East Haven Legislative Town Council

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

October 31, 2012

Marshall W. Dennis
Wetlands & Wildlife, Incorporated
233 Russell Hill Road
Ashburnham, MA 01430

Re: Tweed New Haven Airport Improvement Permit Modifications
NDDB #201205843

Dear Mr. Dennis:

I have reviewed the information regarding requested permit modifications for Tweed New Haven Airport. With regard to the overall airport improvement project, the comments I made with regard to state-listed species in my October 19, 2001 review are still valid. I have provided updated comments for each of the proposed modifications below.

Taxiway B Haul Road: While road removal and restoration of this area was originally planned, retention for limited use is unlikely to negatively impact state-listed wildlife species provided the road remains unpaved except where it joins Taxiway B (as noted on plan sheet PF1.1; October 2011). It should be noted that diamondback terrapins, a turtle species known to occur in the adjacent tidal creeks and channels, may use areas along the haul road for nesting. If the roadway is retained, care should be taken to avoid road mortality during peak egg-laying periods (typically mid-May through mid-July). While not currently state-listed, this species is state regulated and has been experiencing population declines throughout the northeast region.

Extension of Previously Constructed Tidal Creeks: the long-term impacts of enhanced tidal flushing and wetland restoration will ultimately be beneficial for many wildlife species.

Reconstruction of Access Road and Parking Facilities: Given that all activities will occur within the existing footprint, they are unlikely to negatively impact state-listed species.

Mill and Overlay of Taxiway A: Given that all work will be confined to paved areas, this activity is unlikely to negatively impact state-listed species. Any staging of equipment or supplies related to milling and repaving should not occur on grassed surfaces between April 15 and August 31.

Airport Security System Upgrades: this activity will have no impact on state-listed wildlife species.

The Natural Diversity Data Base (NDDB) includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups, and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDB should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the proposed project has not been initiated within 12 months of this review, please contact the NDDB for an updated review.

Please feel free to contact me if you have any additional questions.

Sincerely,

Jenny Dickson
Supervising Wildlife Biologist
Wildlife Diversity Program

cc: K. Zawoy, DEEP OLISP

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

October 19,2001

Marshall W. Dennis
Wetlands & Wildlife, Inc.
409 Massachusetts Avenue, Suite 202
Acton, MA 01720

Re: Tweed-New Haven Airport

Dear Mr. Dennis:

The materials you provided to me regarding proposed runway modifications at Tweed-New Haven Airport address the mitigation needs for potential state-listed grassland bird impacts in a comprehensive way. Your are correct in your indication that use of the recommended seed mix may improve or actually enhance habitat available for these birds. There are two points, however that merit mention.

Mowing needs to comply with FAA regulations for the protection of aircraft safety zone, however a mowing schedule should be developed for Tweed-New Haven Airport which would limit mowing activity in non-critical areas during the birds' nesting period. A similar mowing agreement is currently in place at Bradley International Airport. I would be happy to work with DOT Aviation and Ports staff or airport personnel on such an agreement at the appropriate time.

One thing it is important to recognize about this group of grassland birds is that they are not "flocking" birds. They spend much of their time at ground level foraging and the reaction of many of them is to run when startled rather than fly. This behavior makes them much less likely to be a problem in terms of airstrikes. In addition, mowing these warm-season grasses at longer intervals generally discourages other birds such as Canada geese, starlings, and gulls. These species are all "flocking birds" and can pose significant threats to aircraft. As a result, management for many grassland birds not only benefits state-listed species, but can help an airport alleviate other wildlife-related problems.

The Wildlife Division would be happy to work with the airport on any bird-related concerns that arise in the future. Given the low population levels of state-listed grassland birds, these improvements are unlikely to attract huge numbers of grassland birds. A subsequent "reseeding to a less desirable seed mix" is not something the Division is likely to support unless all other options have been explored and the Division has made the determination that this is the best course of action. This type of decision cannot be made solely by airport staff. This significant habitat alteration would amount to a "taking" of species protected by the Connecticut Endangered Species Act.

Please feel free to contact me if you have additional questions regarding grassland bird management at airports.

Sincerely,

Jenny Dickson
Wildlife Biologist

cc: K.Zavoy

O'Brien, Matthew T.

From: O'Brien, Matthew T.
Sent: Tuesday, December 18, 2012 3:49 PM
To: 'Forrest, Daniel'
Subject: RE: Tweed-Proposed Fence

Dear Mr. Forrest,

Thank you for responding to my previous email. I would like to confirm whether or not you have had a chance to reply to the original Section 106 request. Please let me know. Thank you.

Matthew T. O'Brien, P.E.

From: Forrest, Daniel [mailto:Daniel.Forrest@ct.gov]
Sent: Monday, December 10, 2012 11:27 AM
To: O'Brien, Matthew T.
Cc: McDougal, Evan R.
Subject: RE: Tweed-Proposed Fence

Thank you, Mr. O'Brien.
We have the hard copies you sent by mail and will be providing our comments to you shortly.

Best wishes,

Daniel T. Forrest
Deputy State Historic Preservation Officer
State Historic Preservation Office
Department of Economic and Community Development
One Constitution Plaza, 2nd Flr.
Hartford, CT 06103
(860) 256-2761 - Phone
(860) 256-2763 - Fax

Connecticut
still revolutionary

From: O'Brien, Matthew T. [mailto:mobrien@hoyletanner.com]
Sent: Monday, December 10, 2012 11:20 AM
To: Forrest, Daniel
Cc: McDougal, Evan R.
Subject: Tweed-Proposed Fence

Mr. Forrest,

Please find the attached agency letter and associated exhibits for the proposed Tweed Fence. This is an electronic follow up to the hard copies sent by mail. Please feel free to contact me for any additional information. Thank you.

Matthew T. O'Brien, P.E.
Airport Engineer

Hoyle, Tanner & Associates, Inc.

150 Dow Street | Manchester, NH 03101
(603) 669-5555, ext 123 | Fax: (603) 669-4168

O'Brien, Matthew T.

From: Hillman, Brett <brett_hillman@fws.gov>
Sent: Tuesday, December 18, 2012 4:34 PM
To: O'Brien, Matthew T.
Subject: RE: Tweed- Proposed Fence

Mr. O'Brien,

I have reviewed this project for potential impacts to federally listed species. Since there are no listed species within the action area, I can conclude that none will be adversely affected by the construction of additional fencing to restrict wildlife.

For future projects, please use our new Information, Planning, and Conservation (IPaC) system to check for the presence of federally listed species:

http://ecos.fws.gov/ipac/

This tool allows you to either draw your action area on the map or upload a shapefile. At the end of the process, it will provide you with a list of any federally listed species in the area as well as instructions for initiating consultation (if necessary).

Please let me know if you have any questions!

Best,
Brett

Brett Hillman
Biological Science Technician
U.S. Fish & Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

Phone: 603-223-2541, ext. 34
Fax: 603-223-0104
Email: brett_hillman@fws.gov

"working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people"

---------- Forwarded message ----------
From: **O'Brien, Matthew T.** <mobrien@hoyletanner.com>
Date: Mon, Dec 10, 2012 at 11:38 AM
Subject: FW: Tweed- Proposed Fence
To: "Susi_vonOettingen@fws.gov" <Susi_vonOettingen@fws.gov>
Cc: "McDougal, Evan R." <emcdougal@hoyletanner.com>

Ms. von Oettingen,

Please find the attached agency letter and associated exhibits for the proposed Tweed Fence. This is an electronic follow up to the hard copies sent by mail. (Please note that the USGS Locus Map is not attached due to its large file size.) Please feel free to contact me for any additional information. Thank you.

Matthew T. O'Brien, P.E.

Airport Engineer

150 Dow Street | Manchester, NH 03101

(603) 669-5555, ext 123 | Fax: (603) 669-4168

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, New Hampshire 03101
603-669-5555
603-669-4168 fax
www.hoyletanner.com

December 3, 2012

Daniel Forrest
Archaeologist/Environmental Review Coordinator
State Historic Preservation Office
One Constitution Plaza, 2nd Floor
Hartford, CT 06103

Re: Construct New Perimeter Wildlife Fence
Tweed-New Haven Regional Airport

Dear Mr. Forrest,

Hoyle, Tanner & Associates, Inc. is submitting this letter on behalf of Tweed-New Haven Regional Airport Authority (Sponsor) and the Federal Aviation Administration (FAA), who is acting as the lead federal agency for the U.S. Department of Transportation. The purpose of this letter is to gather data so that a finding may be made in conformance with Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA) and state law (if applicable).

The Tweed-New Haven Airport Authority, owner and operator of the Tweed-New Haven Regional Airport, with the support of federal funding agencies proposes to construct new perimeter fencing to restrict wildlife from encroaching on active runways. A 15-30 foot wide corridor will be constructed to allow for the installation and maintenance of the fence line. A portion of the improvements will be constructed along the property line through tidal wetlands and along an existing sewer access road. No existing structures will be affected as a result of this project.

Please find a Locus Map showing the vicinity of the airport. A site plan is also enclosed showing proposed fence alignment. This is considered the Area of Potential Effect (APE).

Please provide any knowledge of, or concerns with, historic properties in the area, and identify issues relating to the proposed action's potential effect on historic properties. Kindly respond within 30 days of receiving this letter. Feel free to contact me at 603-669-5555, x-123, or by email, mobrien@hoyletanner.com. Thank you.

Sincerely,

HOYLE, TANNER & ASSOCIATES, INC.

Matthew O'Brien, PE
Airport Engineer

Enclosures

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, New Hampshire 03101
603-669-5555
603-669-4168 fax
www.hoyletanner.com

December 3, 2012

Susi von Oettingen
Endangered Species Specialist
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

Re: Construct New Perimeter Wildlife Fence
Tweed-New Haven Regional Airport

Dear Ms. von Oettingen,

Hoyle, Tanner & Associates, Inc. is submitting this letter on behalf of Tweed-New Haven Regional Airport Authority (Sponsor) and the Federal Aviation Administration (FAA), who is acting as the lead federal agency for the U.S. Department of Transportation. The purpose of this letter is to gather data so that a finding may be made in conformance with the National Environmental Policy Act (NEPA).

The Tweed Airport Authority, owner and operator of the Tweed-New Haven Airport, with the support of federal funds, proposes to construct additional fencing to restrict wildlife from encroaching on active runways. This is prompted by a recent wildlife strike between a deer and an aircraft on take-off. A 15-30 foot wide corridor will be constructed to allow for the installation and maintenance of the fence line. A portion of the improvements will be constructed along the property line through fresh water and tidal wetlands and along an existing sewer access road. No existing structures will be affected as a result of this project.

Please find a Locus Map showing the vicinity of the airport. A site plan is also enclosed showing proposed fence alignment

Please provide any us with any information which you may have on federally-listed and/or proposed endangered or threatened species which utilize the subject area. Feel free to contact me at 603-669-5555, x-123, or by email, mobrien@hoyletanner.com. Thank you.

Sincerely,

HOYLE, TANNER & ASSOCIATES, INC.

Matthew O'Brien, PE
Airport Engineer

Enclosures

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, New Hampshire 03101
603-669-5555
603-669-4168 fax
www.hoyletanner.com

December 3, 2012

Mr. Brian Thompson
Office of Long Island Sound Programs
Bureau of Water Protection and Land Reuse
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Re: Construct New Perimeter Wildlife Fence
Tweed-New Haven Regional Airport

Dear Mr. Thompson,

Hoyle, Tanner & Associates, Inc. is submitting this letter on behalf of Tweed-New Haven Regional Airport Authority (Sponsor) and the Federal Aviation Administration (FAA), who is acting as the lead federal agency for the U.S. Department of Transportation. The purpose of this letter is to gather data so that a finding may be made in conformance with the National Environmental Policy Act (NEPA).

The Tweed-New Haven Airport Authority, owner and operator of the Tweed-New Haven Airport, with the support of federal funds, proposes to construct additional fencing to restrict wildlife from encroaching on active runways. This is prompted by a recent wildlife strike between a deer and an aircraft on take-off. A 15-30 foot wide corridor will be constructed to allow for the installation and maintenance of the fence line. A portion of the improvements will be constructed along the property line through fresh water and tidal wetlands and along an existing sewer access road. No existing structures will be affected as a result of this project.

Please find a Locus Map showing the vicinity of the airport. A site plan is also enclosed showing proposed fence alignment.

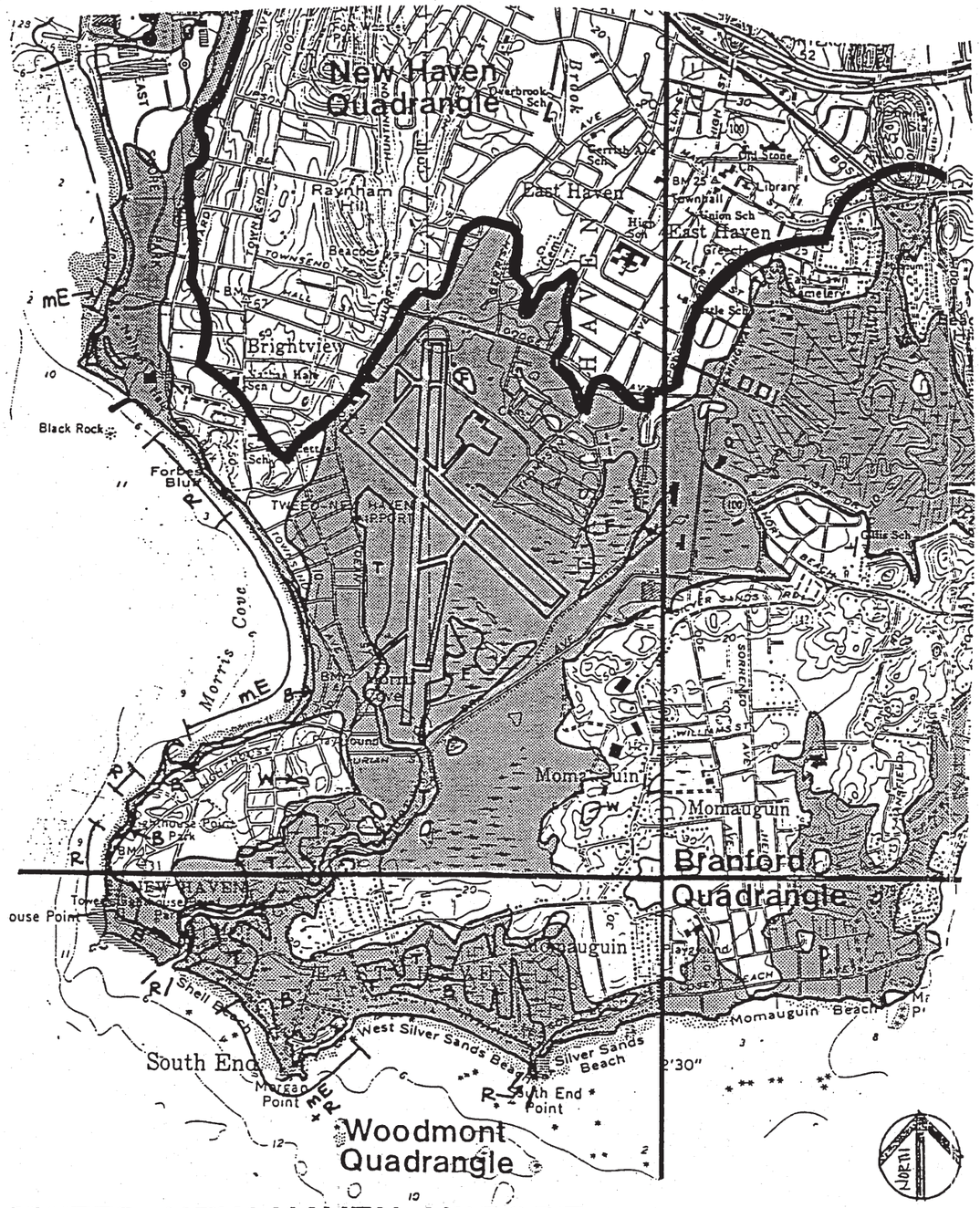
Please provide any us with any information about the coastal zone that may be pertinent. Feel free to contact me at 603-669-5555, x-123, or by email, mobrien@hoyletanner.com. Thank you.

Sincerely,

HOYLE, TANNER & ASSOCIATES, INC.

Matthew O'Brien, PE
Airport Engineer

Enclosures



TWEED–NEW HAVEN AIRPORT

COASTAL RESOURCES MAP

SCALE 1:24000

PREPARED BY: ENVIRONMENTAL DESIGN ASSOCIATES, P.C., 12/14/95. INFORMATION COMPILED FROM COASTAL RESOURCES MAPS PREPARED BY COASTAL AREA MANAGEMENT PROGRAM, CONNECTCUT DEPARTMENT OF ENVIRONMENTAL PROTECTION, 1979.

LEGEND

COASTAL LAND RESOURCES

mE — modified BLUFFS AND ESCARPMENTS: Bluffs and escarpments which have been temporarily stabilized by erosion control structures (revetment, bulkhead or seawall) positioned seaward of the marine cliff or escarpment. (Source: 1)

B — BEACHES AND DUNES: Moderately sloping shores composed of water worked sand, gravel or cobble deposits(beach) and when present, wind deposited sands(dunes or sand flats). The beach (proper) is positioned between mean low water and coastal bluffs/escarpments or dunes or vegetation. The map designations include all areas of sandy beach fill. Dunes and sand flats positioned landward and elevated above the beach, support coastal grasslands dominated by beach grass (*Ammophila breviligulata*). (Sources: 1,2,3,4)

R — ROCKY SHOREFRONTS: Shorefront composed of bedrock or armored with a dense aggregate of boulder and stone. Includes rugged nearly vertical rock cliffs or gently seaward sloping rock and bouldery lands. (Source: 1)

COASTAL 'FLOOD' HAZARD AREA: 100 year coastal flood hazard area as identified by the Federal Emergency Management Agency (FEMA). On those coastal islands currently unmapped by FEMA, the flood hazard area is conservatively approximated by the 10' contour interval. (Sources: 2,5)

F — FRESHWATER WETLANDS AND UNDESIGNATED TIDAL WETLANDS: Areas defined in Section 22a-38 of the Connecticut General Statutes as "land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35('Tidal' Wetlands and Watercourses Act), inclusive, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial and floodplain...(Inland Wetlands and Watercourses Act)." Includes all freshwater wetland soils and any poorly to very poorly drained soils of the Pawcatuck and Westbrook series (tidal wetland soils) that are unmapped and unregulated by the state tidal wetland program. (Sources: 1,5)

SHORELANDS: Upland areas at elevations in excess of the 100 year still water flood level and located within the coastal boundary. (Sources: 2,5)

W — WATER: Open water bodies such as but not limited to lakes and ponds subject to regulation under Sections 22a-36 to 22a-45 of the Connecticut General Statutes. (Source: 2)

INTERTIDAL RESOURCES

T — REGULATED TIDAL WETLANDS: Official state designated and regulated tidal wetlands located within the coastal boundary. The areas depicted on this map shall in no way supersede the official state regulated tidal wetland maps at the scale of 1:2400. (Source: 6)

INTERTIDAL FLATS: Level to gently sloping areas subjected to alternating periods of tidal inundation and exposure. Sediment is variable ranging from mud to sand. (Source: 2)

COASTAL BOUNDARY: As defined in Section 22a-94 of the Connecticut General Statutes as amended by Public Act 79-535. (Lands and waters seaward of the inside edge of this line are subject to the provisions of the Connecticut Coastal Management Act)

SOURCES:

1. False Color Infrared Aerial Photographs (1:12000), 1974
2. U.S.G.S. 7½ Minute Quadrangle
3. Surficial Geology Maps (U.S.G.S. or Connecticut Geological and Natural History Survey)
4. Soil Conservation Service, Coastal Soil Maps (1:24000), 1979.
5. Flood Insurance Maps Prepared by the Federal Emergency Management Agency (hazard boundary maps, preliminary flood insurance rate maps or final flood insurance rate maps, whichever ones were most current at this printing)
6. State Regulated Tidal Wetland Maps (1:2400)
7. Coastal Area Management, Land Use Overlays (1:24000)

SCALE: 1:24000

FIGURE 4.18

HTA companies

TWEED–NEW HAVEN AIRPORT EIS/EIE

COASTAL RESOURCE MAP

MAP

To:
Cc:
Bcc:
Subject: Tweed New Haven Airport Fence Installation
From: James Quinn <jquinn@moheganmail.com> - Thursday 01/31/2013 02:45 PM
History: This message has been replied to.

Mr. Friedenberg,

I have reviewed the information you recently sent my office regarding the above referenced project. It is the opinion of the Mohegan Tribal Historic Preservation Office that there are no properties of cultural, religious or historic significance to the Mohegan Tribe that will be affected by this project as it is proposed.

In the future, can you please send project information to the contact found below. Thank you for the opportunity to comment on this project pursuant to the National Historic Preservation Act.

Best regards,
James

James Quinn
The Mohegan Tribe
Tribal Historic Preservation Officer/Archaeology Department Manager
13 Crow Hill Rd.
Uncasville, CT 06382
Cell # (860) 917-8255
Office# (860) 862-6893
Fax# (860) 862-6395

To:
Cc:
Bcc:
Subject: AIRPORT PROJECT AT TWEED NEW HAVEN AIRPORT, NEW HAVEN, CT
From: "Knowles, Kathleen" <KKnowles@mptn-nsn.gov> - Friday 01/18/2013 02:37 PM

Mr. Todd Friedenberg,
FAA Regional Tribal Consultation Official

Re: AIRPORT PROJECT AT
TWEED NEW HAVEN AIRPORT
NEW HAVEN, CT

Based on a review of the information provided, there does not appear to be any impact to potentially significant religious and cultural resources for the Mashantucket Pequot Tribe.
The Mashantucket Pequot Tribe appreciates the opportunity to review and comment on this proposed project.

Kathleen Knowles,
Tribal Historic Preservation Officer

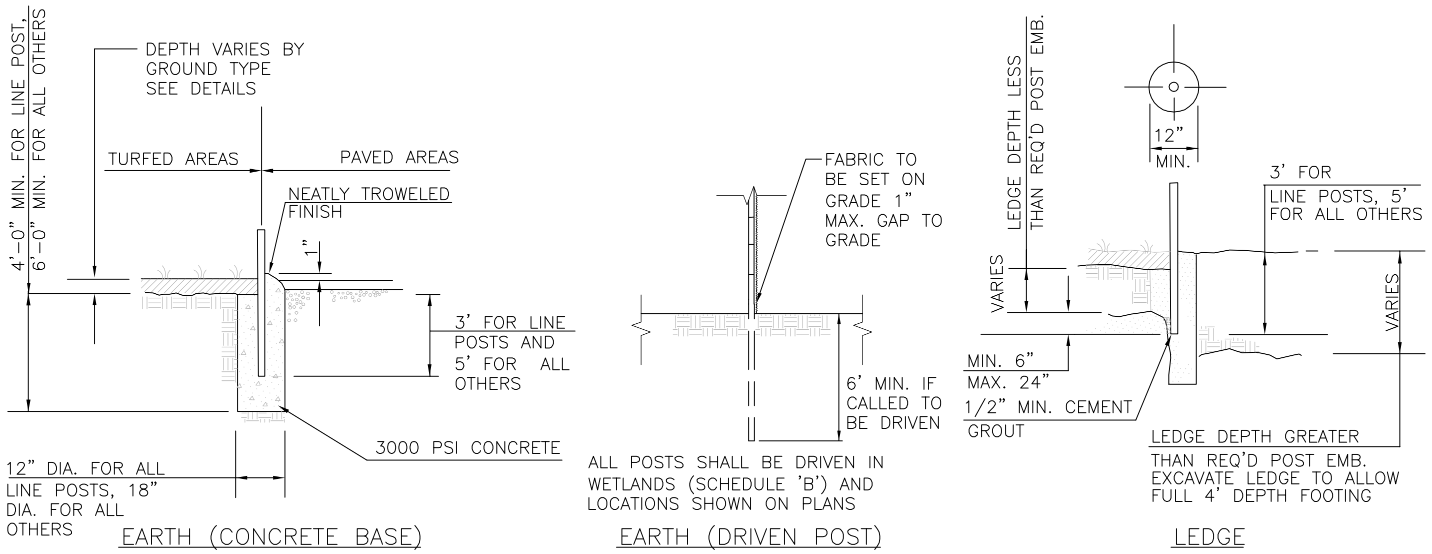
Mashantucket Pequot Tribal Nation
Natural Resources Protection &
Regulatory Affairs
550 Trolley Line Blvd.
P.O. Box 3202
Mashantucket, CT 06338-3202
Tel 860 396 6887 Fax 860 396 6914

kknowles@mptn-nsn.gov

Appendix C:

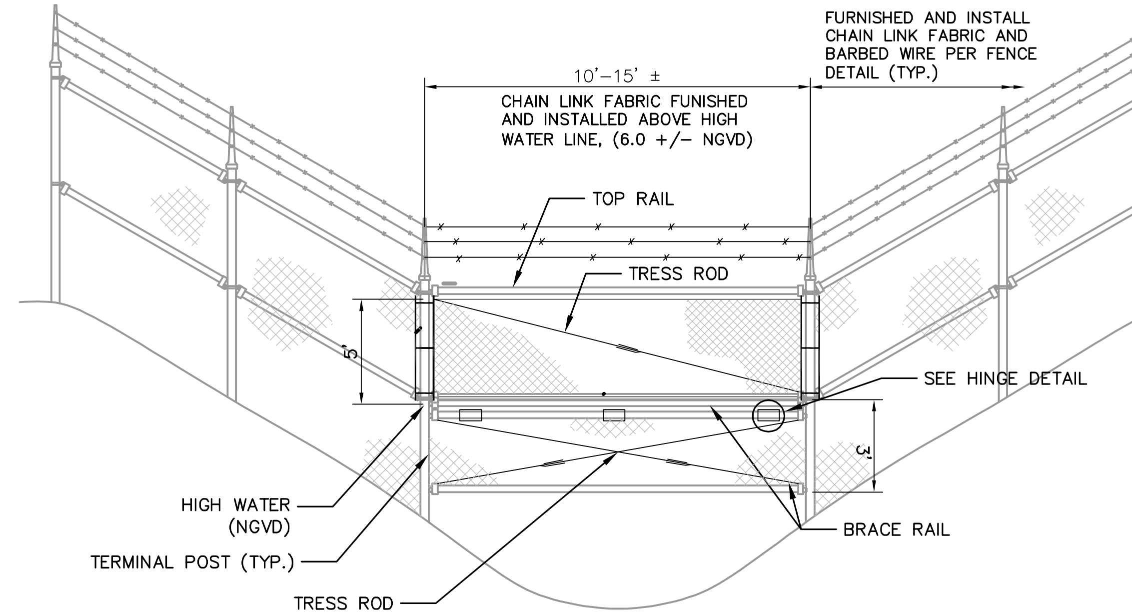
Design Details

Fences shall be grounded on each side of every gate, at points 150 feet (45.7 m) on each side of high-tension line crossings, and at 150-foot (47.5 m) intervals along the fence where high tension lines (as defined by ANSI C2) are directly overhead and run parallel to the fence. Fences shall be ground every 1,000 feet to 1,500 feet of length when fence are in isolated places and at lesser distances depending on proximity of fence to public roads, highways, and buildings. The ground shall be accomplished with a copper clad rod 10 feet long and a minimum of 3/4 inch in diameter driven vertically until the top is 6 inches below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded.



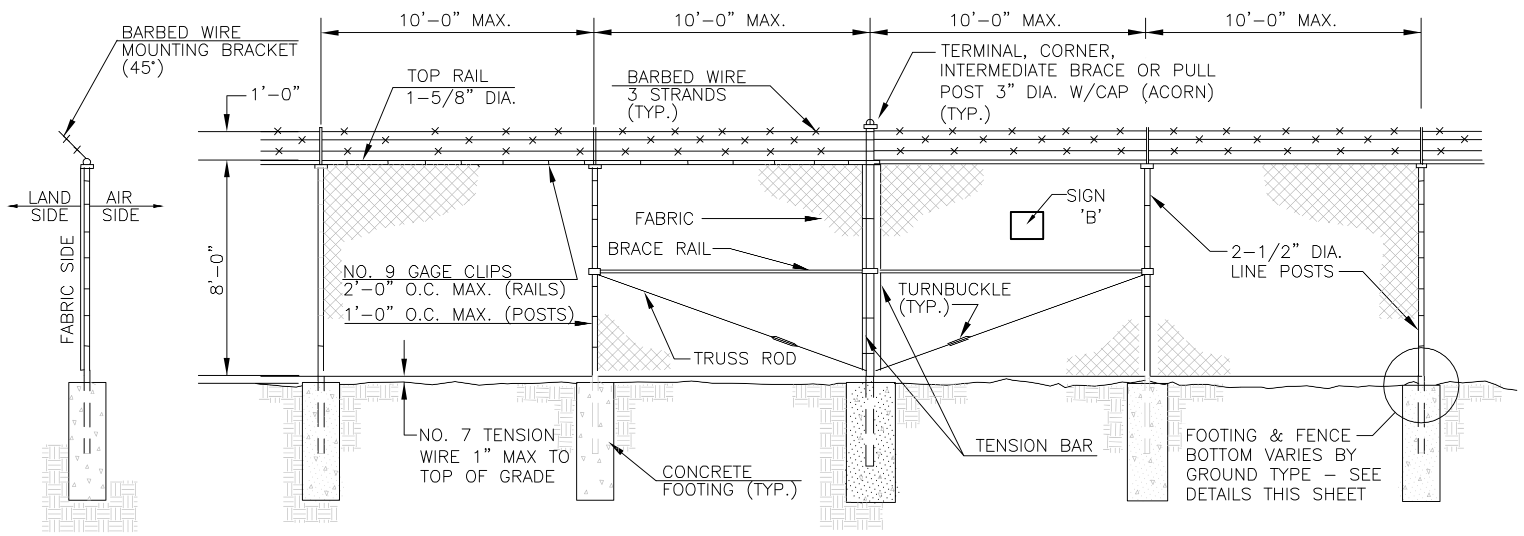
POST SETTING DETAILS

NOT TO SCALE



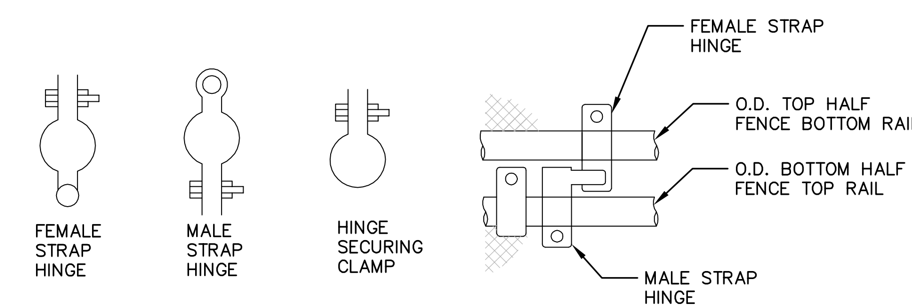
BREAK AWAY FENCE DETAIL AT CHANNEL CROSSING

NOT TO SCALE



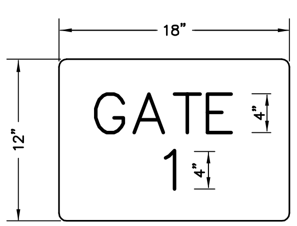
INTERMEDIATE POST ASSEMBLY

NOT TO SCALE



HINGE DETAIL

NOT TO SCALE

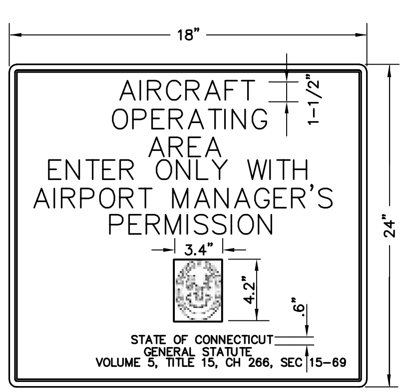


SIGN 'A' DETAIL

NOT TO SCALE

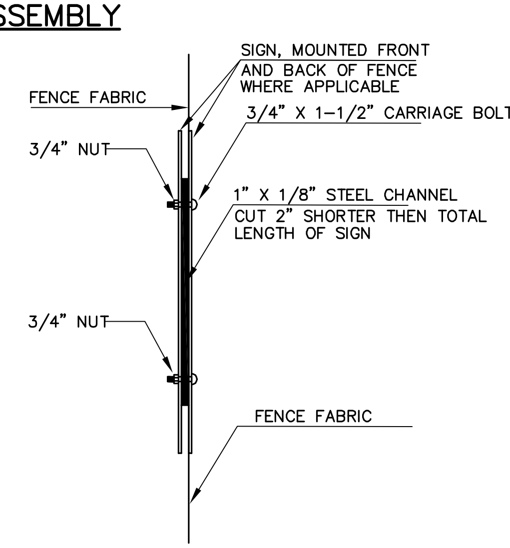
SIGN NOTES:

1. SIGN 'A' TO BE ATTACHED TO EACH GATE.
2. SIGN 'B' TO BE ATTACHED EVERY 200' ALONG FENCE.



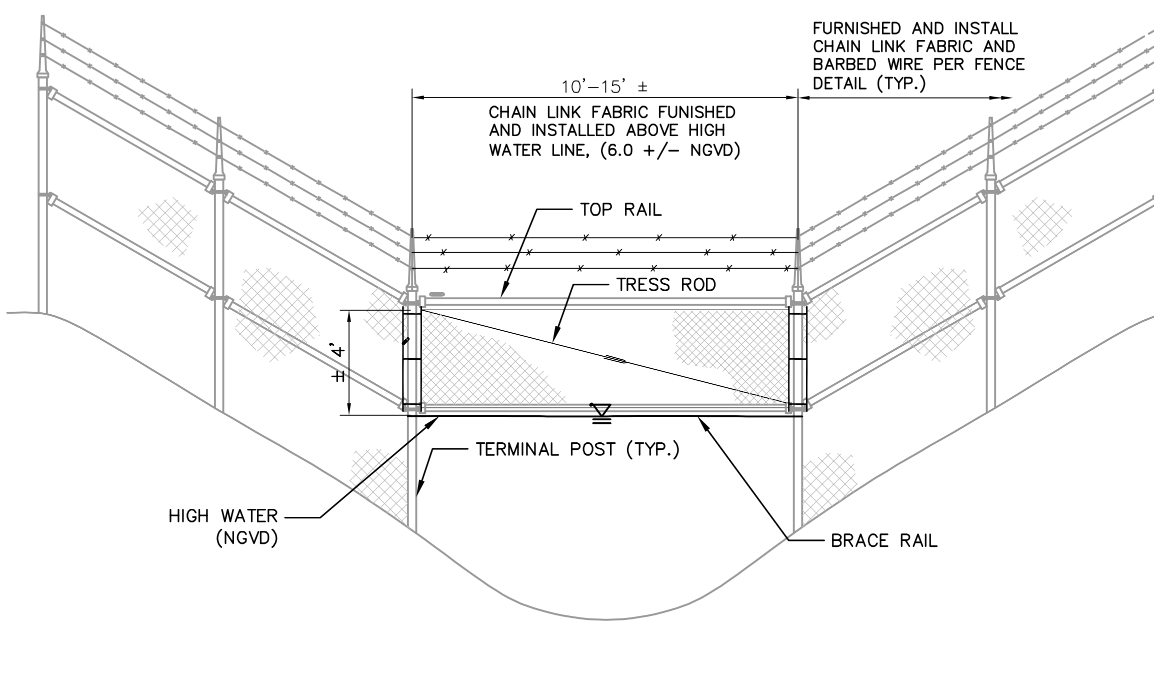
SIGN 'B' DETAIL

NOT TO SCALE



SIGN MOUNTING DETAIL

NOT TO SCALE



CHANNEL CROSSING DETAIL

NOT TO SCALE

ENGINEER'S SEAL

PROJECT DESIGNER

Hoyle, Tanner & Associates, Inc.

150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

Hoyle Tanner & Associates © 2012

DESIGNED BY	DRAWN BY	CHECKED BY
TJA	DDS	RMF

TWEED - NEW HAVEN REGIONAL AIRPORT
SECURITY FENCE PROJECT

FENCE DETAILS

DATE: DEC 2012

SCALE: N.T.S.

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

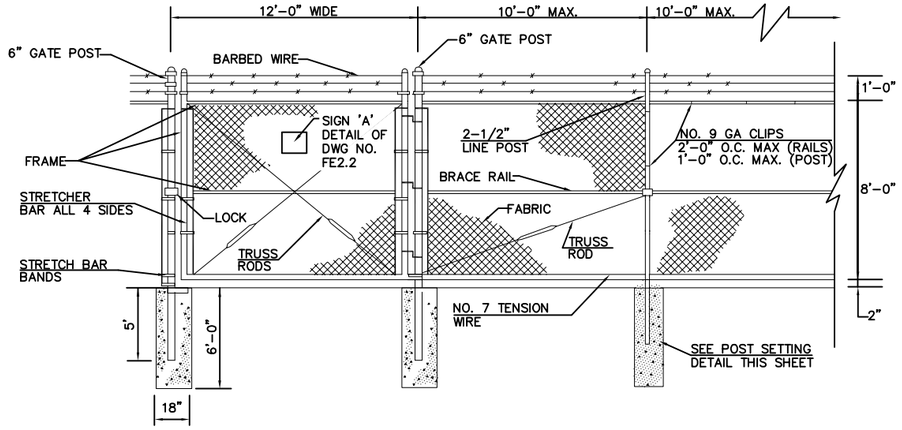
PROJ. No.: 063218
FILE NAME: HVN-FE202
AIP: 3-09-0013-33-2013

DRAWING NO.

FE2.2

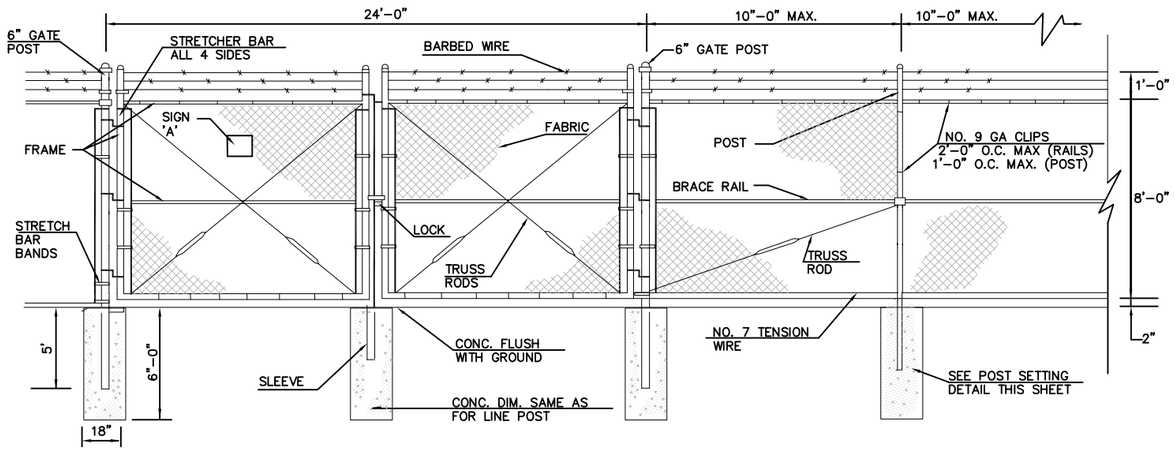
SHEET __ OF __

Drawing name: H:\063218\dwg\CONTRACT\Fencing\HVN18-FE202.dwg Jun 20, 2013 - 3:41pm



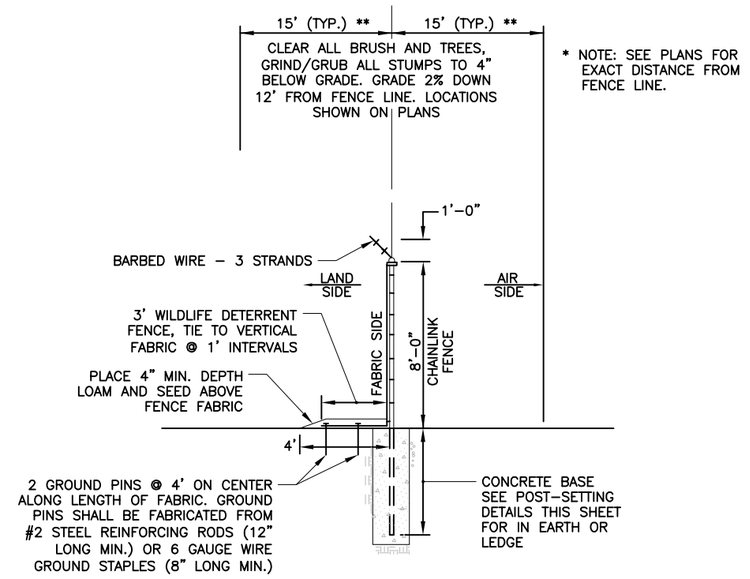
SINGLE SWING GATE DETAIL

NOT TO SCALE



DOUBLE SWING DRIVE GATE DETAIL

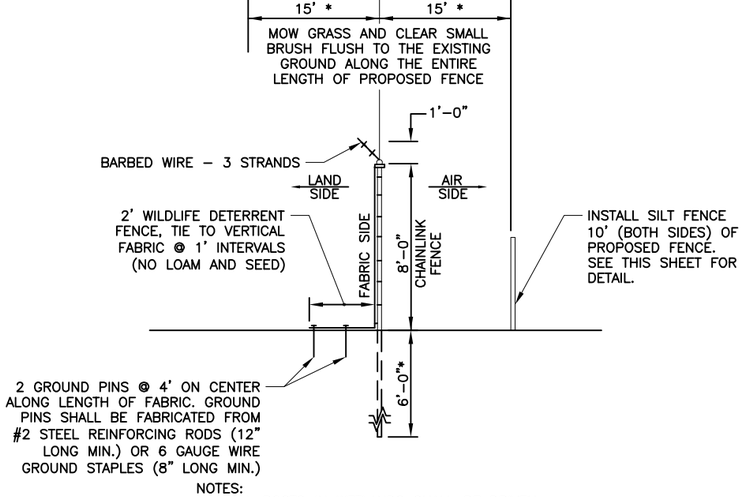
NOT TO SCALE



NOTE:
1. SEE DWG. NOS. FE1.1–FE1.5 FOR CHAIN LINK FENCE LOCATIONS IN UPLAND AREAS
** 2. CLEARING LIMITS MAY BE MORE DEFINED TO AVOID WETLAND CHANNEL. SEE PLANS FOR DEFINED LIMITS.

CHAIN LINK FENCE IN UPLANDS CROSS SECTION

NOT TO SCALE



NOTES:
1. * ALL POSTS IN WETLANDS SHALL BE DRIVEN.
2. SEE DWG. NOS. FE1.1 & FE1.5 FOR CHAIN LINK FENCE LOCATIONS IN WETLAND AREAS.

CHAIN LINK FENCE IN WETLANDS CROSS SECTION

NOT TO SCALE

ENGINEER'S SEAL

PROJECT DESIGNER
Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

DESIGNED BY TJA | DRAWN BY JLC | CHECKED BY RMF

TWEED – NEW HAVEN REGIONAL AIRPORT
SECURITY FENCE PROJECT

WILDLIFE FENCE DETAILS

SCALE: NOT TO SCALE | DATE: DEC 2012

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

PROJ. No.: 063218
FILE NAME: BXM–FE201
AIP: 3–09–0013–33–2013

DRAWING NO.

FE2.1

SHEET _ OF _

FILE: HVNR-FE201.dwg PLOT DATE: Jun 20, 2013 - 3:40pm SAVED BY: vjb
Drawing name: H:\063218\dwg\CONTRACT\Fencing\HVNR-FE201.dwg Jun 20, 2013 - 3:40pm

Appendix D: Grassland Management Plan

155 Burr Street
Administration Building
New Haven, CT 06512
Phone: (203) 466-8833
Fax: (203) 466-1199

April 13, 2011

Mr. Kevin Zawoy
Environmental Analyst III
CT DEP
Office of Long Island Sound Programs
79 Elm Street
Hartford, CT 06106-5127
United States of America

RE: PERMIT # IW-2000-116, DIV-200003052, WQC-200003051
Grassland Management Plan (Original February, 2008)
UPDATE, November 2010

Dear Mr. Zawoy:

Thank you for taking the time to visit our airport on September 14th, 2010. During your visit and discussions with Mr. Marshall Dennis and Mr. Charles Kurtz, you expressed interest in the airport's current mowing procedures in both the airfield safety and non-safety/non-critical areas. The following discussion (as related to our February 2008 Grassland Management Plan) is intended to address your concerns.

As stated in the original February, 2008 Grassland Management Plan, filed with DEP in February 2008, certain procedures can and should be updated based on the observations of Airport staff as related to the the safety of the Airport. The 2008 plan outlines mowing procedures for the safety critical areas of the airport, reference Drawing No. 1 of the plan. The following discussion summarizes wildlife activities at the airport from April 2009 to present, or since the completion of runway safety area improvements at the south end of the airport.

The airport monitors wildlife on and near the airfield in accordance with 14 CFR Part 139 Section §139.337 Wildlife Hazard Management, and has developed and maintains their own specific Wildlife Hazard Management Plan. The plan places a particular emphasis on identification and abatement of wildlife hazards within the airfield environment. The plan ensures that the Airport will take immediate measures to identify and mitigate wildlife hazards whenever they are detected or whenever airport management has been advised that hazardous conditions exist. The plan outlines steps for monitoring, documenting, and reporting potential wildlife hazards and strikes at the Airport. Protocols for responding to hazardous wildlife situations are presented, including roles and responsibilities of airport personnel.

Pursuant to the plan, the Airport has encountered steady levels of wildlife hazard incidents which have been successfully mitigated through implementation of the plan. One of the most common hazards to airfield safety has been bird strikes. The airport finds it is necessary to maintain mowing procedures within safety critical areas, as shown on Drawing No.1 of the 2008 Grassland Management Plan. Within non-safety critical areas, Airport maintenance staff limits

mowing as much as practicable without allowing wildlife attractants to increase the frequency of potential bird strikes. However, in the event an increase in wildlife attractants (insects, vectors, herbivores, small and large mammals) is observed by airport staff, non-critical safety areas that abut critical areas are mowed. This further reduces the risk of wildlife hazards within both safety and non-safety critical areas. Conversely, when wildlife attractants are deemed to be at an acceptable and safe level, non-critical safety areas are mowed in accordance with the Grassland Management Plan.

This update is intended to supplement the 2008 plan for two reasons:

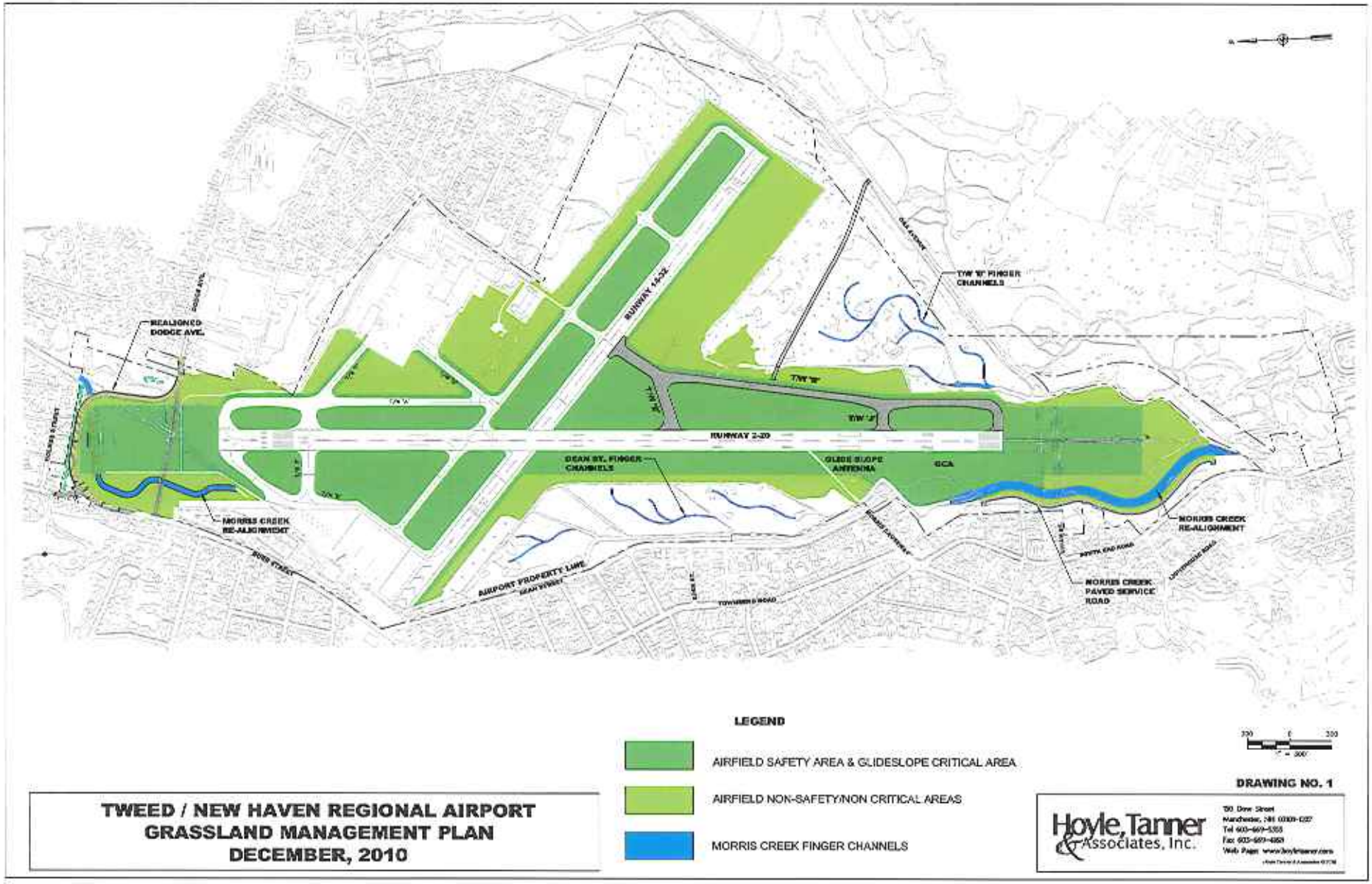
1) Inform CT DEP that the airport maintains the 2008 Grassland Management Plan through standard wildlife management procedures and standard grounds maintenance procedures. The plan illustrates the intended mowing areas and delineates these areas according to a purposeful balance between wildlife management and airport safety. These procedures are briefed at the airport on a quarterly basis and are made a part of standard training procedures for all airport staff.

2) Report that as much as practicable, the Airport is limiting mowing of non-safety critical areas in accordance with the 2008 plan. However, CT DEP should be aware that the plan was intended to serve as a set of guidelines and to be amendable, as needed, to ensure overall Airport safety. Therefore, the airport wishes to inform CT DEP that minor deviations the 2008 plan (mowing procedures in non-safety critical areas) have been deemed necessary in the past 18 months to maintain safe airfield operations. These occasions have been dealt with as exceptions to the plan, and have not permanently altered standard operating procedures. Further and potential future deviations will be handled on a case by case basis and will be managed with sensitivity towards the goals and objectives of the 2008 Grassland Management Plan.

Respectfully,

Lori Hoffman-Soares
Airport Manager

cc: M. Dennis, Wetlands & Wildlife Inc.
R. Furey, Hoyle Tanner & Associates, Inc.
D. Wilda, USDA



TWEED / NEW HAVEN REGIONAL AIRPORT
GRASSLAND MANAGEMENT PLAN
DECEMBER, 2010

DRAWING NO. 1

Hoyle, Tanner & Associates, Inc.
Manchester, NH 03101-1127
Tel 603-669-5555
Fax 603-669-4555
Web Page: www.hoyletanner.com

Appendix E:

Wildlife Evaluation

233 Russell Hill Road
Ashburnham, MA 01430
978-827-5800
FAX: 978-827-5802
Email: mwdennis@verizon.net

Wetlands & Wildlife, Inc.
Environmental Consulting and Permitting

Memorandum

To: Robert Furey, P.E. **From:** Marshall W. Dennis

Date: January 23, 2013

Re: Proposed Wildlife Hazard Deterrent Fence @Tweed-New Haven Airport **CC:** File #1208

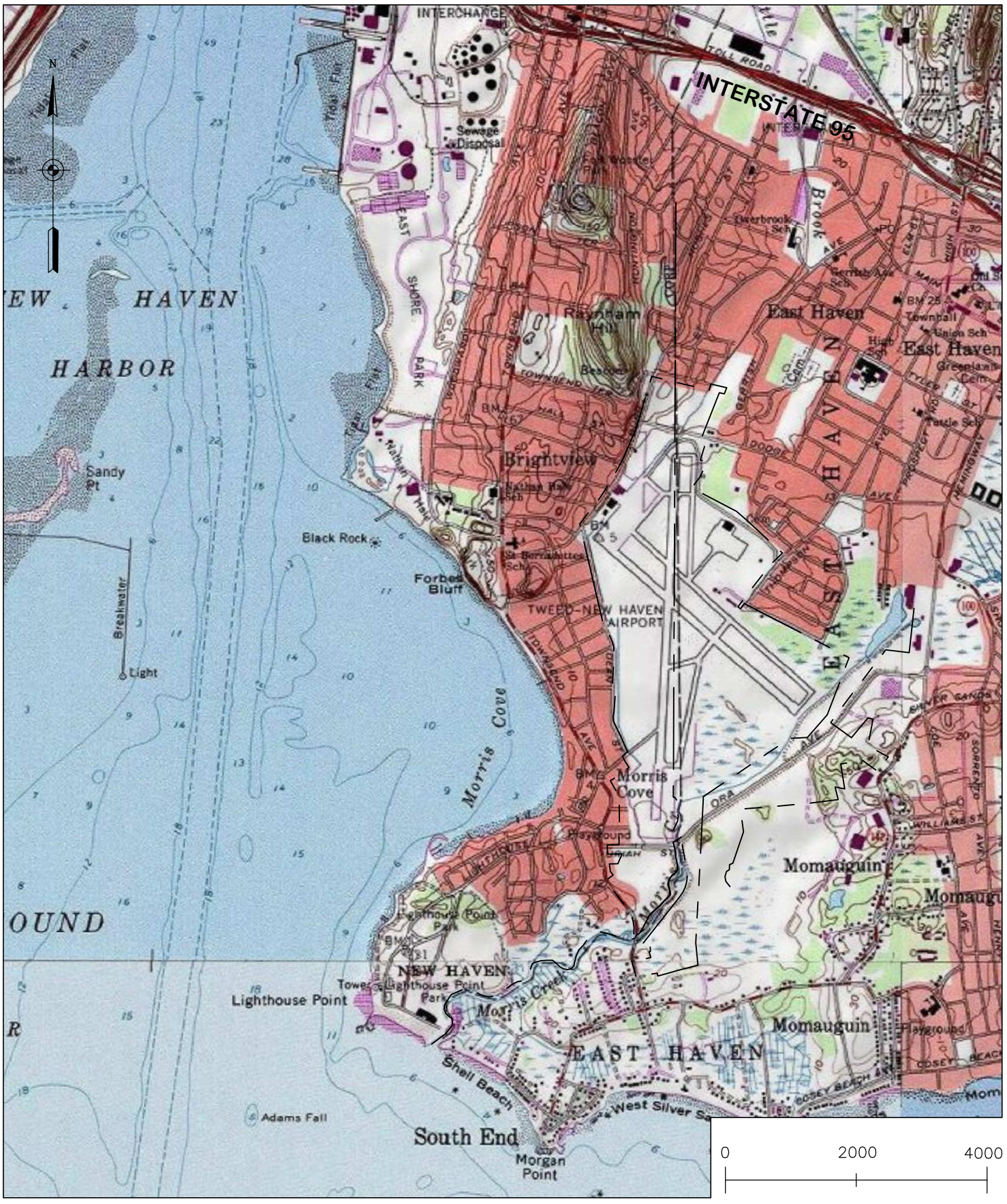
☐ **Urgent** X **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **FYI**

1.0 BACKGROUND

The following discussion addresses the potential impacts to wildlife populations associated with the proposed installation of a perimeter fence surrounding the Tweed-New Haven Airport (the 'Airport') located in New Haven and East Haven (see Figure 1). The proposed fence, up to ten (10) feet in height with three (3) strands of out-facing barbed wire, will totally enclose the Airport and is designed to preclude non-avian wildlife from accessing the Airport proper. Wherever possible, a four (4) foot fabric skirt will be buried on the exterior (landside) to discourage burrowing underneath the vertical fence.

As described in Airport's *Wildlife Hazard Assessment/Management Plan* (2012) prepared by U.S. Department of Agriculture (USDA) Wildlife Services staff, "Any species of wildlife that is capable of crossing the runway or flying in conflicted airspace can be a threat to aircraft and human safety". On 20 September 2012, for example, two white-tailed deer (*Odocoileus virginianus*) entered the runway as a jet was taking off. The aircraft struck one of animals, causing damage to the wing and landing gear. The collision was fatal for the deer. The aircraft was able to abort the takeoff, however, and no injuries were reported as a result of this incident.

Past occurrence of bird strikes also have been documented at the Airport. There have been numerous observations of large mammals, including white-tailed deer and coyote (*Canis latrans*) on the airfield, as well. In fact, due to the number of deer sightings, both the U.S. Fish & Wildlife Service (FWS) and the CT Department of Energy and Environmental Protection (CT DEEP) have issued wildlife depredation permits to the Airport.



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TWEED–NEW HAVEN AIRPORT
NEW HAVEN, CONNECTICUT

LOCATION MAP

FIGURE
1

2.0 EXISTING VEGETATION AND WILDLIFE RESOURCES

2.1 VEGETATION

Existing biotic resources have been addressed in Section 5.2 of the Environmental Assessment (EA). In summary, both upland and wetland (i.e. tidal and freshwater) habitat are located on and adjacent to the Airport.

2.1.1 Upland Plant Communities

Upland vegetative communities within and near the Airport primarily consist of maintained grounds, old fields/successional lands and wooded knolls.

Maintained Grounds @Runway 2 Safety Area

The maintained grounds areas include the airport runways and structures, asphalt roads, and neighboring residential and industrial lots. Most of the developed lands are vegetated with lawns, and landscaped with trees and shrubs. Old field conditions exist generally adjacent to the maintained grounds portions of the airport. These fields are dominated by herbaceous vegetation that is cut on a seasonal basis. Some areas both north and south of Morris Creek, however, are in somewhat more advanced stages of succession. In these areas, woody plant species also are present, such as black cherry (*Prunus serotina*), red oak (*Quercus rubra*), staghorn sumac (*Rhus typhina*), Autumn Olive (*Elaeagnus umbellata*) honeysuckle (*Lonicera morrowi*) and multifora rose (*Rosa multiflora*).

Wooded Knoll @Ora Avenue Tidal Wetland Restoration Area

Several wooded knolls occur on and off the Airport east of Runway 2/20, south of Runway End 2 and northeast of Ora Avenue. These knolls range up to approximately 25 feet above the surrounding landscape. Bedrock is close to, and often exposed above, the ground surface. The majority of the knolls are dominated by red oak, scarlet oak (*Quercus coccinea*) and gray birch (*Betula populifolia*), with other plant species consisting of sassafras (*Sassafras albidum*), white oak (*Quercus alba*), tree-of-heaven (*Ailanthus altissima*), staghorn sumac, highbush blueberry (*Vaccinium corymbosum*), lowbush blueberry (*Vaccinium angustifolium*), maple-leaf viburnum (*Viburnum acerifolium*) and cat-brier (*Smilax glauca*).

2.1.2 WETLANDS

Wetlands on and adjacent to the Airport include tidal and freshwater wetlands. Seaward of the Morris Creek tide gate where salinities generally approach 30 parts per thousand, tidal wetlands are dominated by saltwater cordgrass (*Spartina alterniflora*) and salt meadow cordgrass (*Spartina patens*). Landward of the tide gate where salinities generally are lower, the most abundant plant species consist not only of saltwater cordgrass and salt meadow cordgrass, but vast expanses of the invasive common reed (*Phragmites australis*), especially south of Morris Creek.

In this regard, it should be noted that over the past five (5) years, the Morris Creek tide gate has been operating in a manner that allows tidal flows to wetlands landward of the tide gate. To date, this has allowed for the partial conversion of lands dominated by *Phragmites* to lands dominated by typical salt marsh species, e.g. saltwater cordgrass and salt meadow cordgrass (see photographs below).

Saltwater Cordgrass Bordering Relocated Morris Creek

Restored Saltwater Cordgrass @Ora Avenue Tidal Wetland Restoration Area (in foreground at right)

Forested Freshwater Wetland @Proto Drive

Generally between Runway 14/32 and the haul road, as well as north and east of the haul road, forested freshwater wetlands are most prevalent. Dominated by red maple (*Acer rubrum*) in the overstory, while silky dogwood (*Cornus amomum*), arrowwood (*Viburnum dentatum*) and tussock sedge (*Carex stricta*) constitute prevalent understory species.

Freshwater wetlands also occur west of the Runway 20 safety area. This narrow primarily emergent wetland is associated with relocated Tuttle Brook. Plant species associated with this wetland include pickerel weed (*Pontederia cordata*), arrow-arrum (*Peltandra virginica*),

halberd-leaved tearthumb (*Polygonum arifolium*), jewelweed (*Impatiens capensis*), Joe-pye-weed (*Eupatorium maculatum*), soft-stemmed bulrush (*Scirpus validus*), lurid sedge (*Carex lurida)* and rice-cutgrass (*Leerzia oryzoides*), among others.

Emergent Freshwater Wetland @Runway Safety Area 20

2.2 WILDLIFE RESOURCES

Plant communities in and around the Airport provide habitat for a relatively diverse assemblage of wildlife species, particularly given the extent to which development exists in the Morris Cove/Lighthouse Point section of New Haven and the Momauguin section of southern East Haven. Overall, USDA/Wildlife Services staff has observed ten (10) species of mammals, 100 species of birds, and two (2) species of reptiles on Airport property.

Osprey

Collectively, the relatively diverse vegetative resources provide some or all of the life-sustaining requirements for numerous wildlife species, particularly since many of these species utilize multiple habitats during their life cycles. Species for which suitable habitat is available on and proximate to the Airport include a wide range of large and small mammals, birds of prey [e.g. osprey (*Pandion haliaetus*) and Northern harrier (*Circus cyaneus*)], shorebirds [e.g. killdeer (*Charadrius vociferous*) and sandpipers], wading birds [e.g. great egret (*Ardea albus*) and snowy egret (*Egretta thula*)], Canada geese and various species of ducks and gulls, songbirds (resident and migratory), reptiles associated with upland habitats (e.g. Eastern garter snake (*Thamnophis s. sirtalis*), and reptiles and amphibians associated with freshwater wetlands [e.g. snapping turtle (*Chelydra serpentina*) and green frog (*Rana clamitans*). Finfish, such as mummichogs (*Fundulus heteroclitus*) and shellfish [e.g. oysters (*Crassostrea virginica*)] also occur in tidal waters on and offsite.

State-listed endangered/threatened species and species of special concern also utilize the Airport and surrounding habitats. These include the above-referenced Northern harrier (Endangered), great egret (Threatened), snowy egret (Threatened) and other State-listed species.

Great Egret (Threatened)

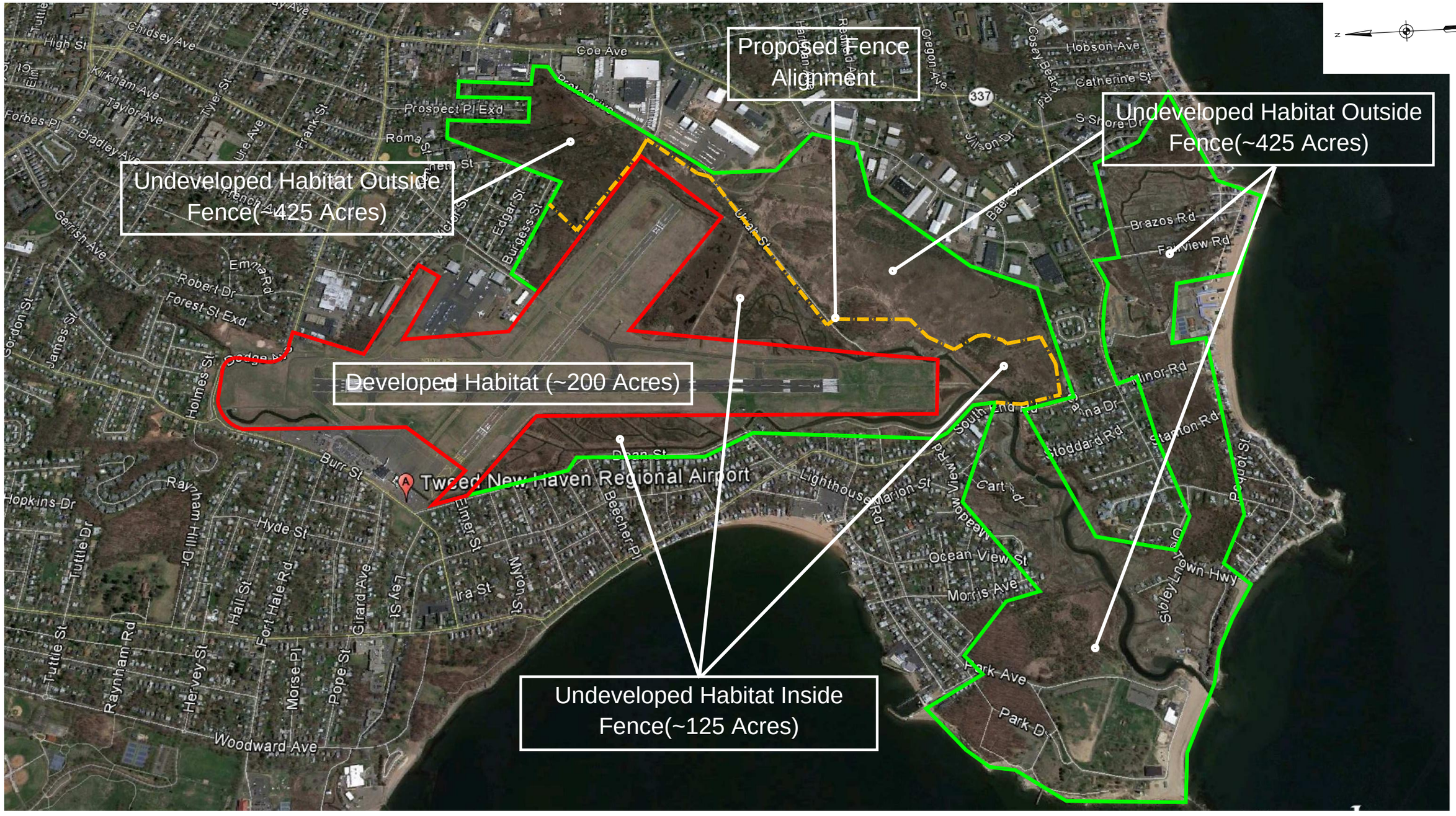

Figure 2 Pre- & Post-Fence Construction Wildlife Habitat Availability

TWEED / NEW HAVEN REGIONAL AIRPORT

0 500 1250 2500 FEET

1"=500'

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Further, recent correspondence (31 October 2012) received from the CT DEEP/Wildlife Division relative to State-listed endangered/threatened species and species of special concern also noted that diamond back terrapins (*Malaclemys t. terrapin*) may use areas along the haul road for nesting. To date, however, no evidence of this occurrence has been observed along or proximate to the haul road or anywhere else on or proximate to the Airport. This likely is due to the blockage of turtle movements upstream by the Morris Creek tide gate located downstream and west of South End Road.

3.0 WILDLIFE IMPACT EVALUATION

3.1 Future Habitat Availability

Besides the maintained grounds and seasonally maintained old field communities associated with the runways and taxiways, existing wildlife habitats for non-avian species that utilize the Airport proper and surrounding lands are anticipated to consist of the undeveloped lands primarily west of Coe Avenue (see Figure 2). These lands generally may be described as follows:

- South of the residential neighborhoods along Dodge Avenue;
- West of the development along Coe Avenue, Proto Drive, Uriah Street and Commerce Street;
- North and south of the residential areas along Silver Sands Road (Route 337);
- South of the residences along lower South End Road;
- East and west of the residences along South Street;
- East of the residences along upper South End Road and Dean Street; and
- West of South End Road along Morris Creek, including Lighthouse Point.

It is acknowledged that such species as white-tailed deer and coyote may venture outside this area, such as to undeveloped lands within the Farm River watershed east of Coe Avenue. It is anticipated, however, that the highly developed Coe Avenue corridor functions as a significant deterrent to non-avian wildlife movements, thus limiting wildlife access between the undeveloped lands associated with Morris Creek and the Farm River.

As shown on Figure 2, developed portions of the Airport contain an area of approximately 200 acres of wildlife habitat along the runways and taxiways, while adjacent undeveloped habitat encompasses an area of approximately 550 acres, for a collective total of ~750 acres of viable wildlife habitat. As previously noted, the vegetative resources within this overall area of wildlife habitat provide some or all of the life-sustaining requirements for numerous wildlife species.

For many migrating bird species, for instance, the Airport represents a temporary stopover or wintering area along the Atlantic Flyway. Further, while such permanent residents as

White-Tailed Deer on Airport Property

white-tailed deer and cottontail rabbits (*Sylvilagus floridanus*) may feed on the herbaceous vegetation along the runways and taxiways, these areas do not provide the cover and breeding habitat required by these species.

Regardless, with the potential exception of shrews, voles, moles, mice and rats that are small enough to enter the site via gates and/or other similar structures, the installation of the proposed perimeter fence will effectively preclude access by non-avian wildlife to approximately 325 acres of land primarily consisting of maintained ground (~200 acres), and a ~125-acre mixture of more naturally occurring uplands and freshwater wetlands, as well as tidal habitats associated with the Ora Avenue and Dean Street wetland restoration areas. Thus, of the 750 acres of land presently serving as wildlife habitat, approximately 425 acres will remain as available habitat to non-avian species following fence installation, an overall reduction of approximately 43%.

3.2 Population Effects and Wildlife/Human Interactions

For the notably smaller mammals (e.g. shrews, voles, moles, mice and rats), as well as reptiles, amphibians and fish populations, activity patterns and population dynamics are not likely to be disrupted due to the relatively small home ranges characteristic of these species.

Mummichog @Tidal Creeks

With respect to larger mammals, however, the effects associated with fence installation will be more pronounced. It is anticipated that individuals of various species will become 'trapped' inside Airport property subsequent to fence construction, thereby precluding their access to traditional/pre-fence home range habitats and altering current predator/prey dynamics. The proposed action also will decrease the diversity of habitats available to non-avian wildlife inside the fence. With the exception of the maintained grounds associated with runways and taxiways, for example, the vast majority of the area inside the fence will consist of freshwater and tidal wetlands, i.e. unsuitable long-term habitats for most mammalian species.

Accordingly, isolation and habitat exclusion ultimately will result in the mortality of many isolated individuals, primarily due to the lack of suitable food sources, vegetative cover and breeding sites. Fencing and the lack of suitable habitat also may result in the temporary increased frequency of such species as white-tailed deer, coyote and cottontails within the Airport's maintained grounds in search of food. Omnivores, such as striped skunk (*Mephitis*

mephitis), opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*) may fare better in the short term, particularly since the latter two species may be able to climb over the fence to escape isolation. However, the paucity of habitat characteristics associated with larger mammalian species, coupled with the probable absence of available mates, eventually will lead to the elimination of most, if not all of these species inside the fence. FWS- and CT DEEP-approved depredation also is expected to play a key role in eliminating individual wildlife species inside the fence.

For wildlife individuals whose habitats inside the fence are no longer available, opportunities in securing requisite life-sustaining requirements outside the fence, similarly, will become more limiting. Again, it is acknowledged that such species as opossum and raccoon may climb over and inside the fence in search of supplemental habitat, just as they may climb over and outside the fence. The habitual 'fence climbing' behavior of these species to access otherwise non-accessible lands, however, is dubious. As noted above, lands inside the fence mostly will consist of freshwater and tidal wetlands. While opossums and raccoons frequent such habitats, other habitats are required, as well.

The fact that existing wildlife populations will occur within a reduced area also will affect, as with the animals inside the fence, predator/prey dynamics and, eventually, species population levels. Clearly, available wildlife habitat following the loss of approximately 325 acres of formally available habitat will not be able to sustain the same or similar number of individuals, especially since the home ranges of small (e.g. cottontail rabbits) and large mammals (e.g. coyotes) may extend from 100 acres to multiple square miles, as well as the fact that many of these species will be competing for the same available food sources. Consequently, the present population of these animals will decrease until sustainable population levels once again are attained.

The exclusion of previously available habitat also is expected to increase wildlife/human interactions. For example, whereas deer once fed on woody and herbaceous plant species in Airport woodlands, as well as along the runways and taxiways, it's probable that the exclusion of these food sources and the limited abundance of food outside the fence will necessitate deer to seek residential plantings as a source of nourishment. Such interactions, primarily with respect to the storage of organic solid waste, also are expected to increase with respect to other mammals, including the omnivorous opossum, striped skunk and raccoon. In addition, fencing may result in residential areas in the vicinity of South End, Silver Sands, Minor and Roses Farm Roads being used as wildlife travel corridors, particularly since this area represents the shortest distance between available habitats north, south and west of these residences.

4.0 SUMMARY

The Tweed-New Haven Airport Authority is proposing to install a perimeter fence around the Tweed-New Haven Airport. With the primary exception of very small mammals, this fence will effectively serve to preclude non-avian wildlife access to the Airport.

As described above, project implementation will result in a reduction in the quantity and diversity of available wildlife habitats within the geographic area presumed to constitute the home range of affected wildlife species. Thus, existing non-avian wildlife populations will be confined to a markedly smaller and modified landscape of undeveloped lands surrounded primarily by residential and industrial land uses.

In this regard, it is important to note that not only will the size of remaining undeveloped lands play an important role in future individual, population and community dynamics, but landscape composition, as well. Remaining undeveloped lands, for instance, will not simply be a proportionate reduction of presently available habitats that theoretically would lead to a proportionate decrease in the number of individuals of each species. As noted above, between 100 – 125 acres of relatively high quality freshwater and tidal wetlands will be fenced off and no longer be available to non-avian wildlife. Consequently, the habitats actually remaining for use by wildlife, for the most part, will consist of vast expanses of degraded wetlands dominated by invasive common reed (*Phragmites australis*), especially south of Morris Creek. The availability of woodland habitat also will be notably reduced.

These habitat conditions will not be able to sustain the same or similar number of individuals. Instead, the diminished extent of available habitat will result in the carrying capacity of these lands for wildlife to be exceeded, leading to wildlife mortality due to such decimating factors as starvation, predation, accidents (e.g. animal/vehicle collisions) and stress. In response to the limited available habitat, some individual white-tailed deer and coyotes, for example, may attempt to seek more suitable habitat elsewhere, such as within the Farm River watershed. It is probable, however, that the carrying capacity for such species in this area already has been attained, thereby leading to the mortality of migrating individuals. Further, changes in landscape composition, as noted above, also are anticipated to contribute to wildlife mortality, emigration and alterations to the composition of wildlife populations in the subject area.

Lastly, the exclusion of previously available habitat also is expected to increase wildlife/human interactions, including but not necessarily limited to wildlife consumption of vegetation within residential areas. The disturbance of outdoor refuse containers by wildlife in search of food also is expected to increase, as is pet predation primarily by coyotes. In addition, fencing may result in residential areas in the vicinity of South End, Silver Sands, Minor and Roses Farm Roads being used as wildlife travel corridors, particularly since this area represents the shortest distance between available habitats north, south and west of these residences.

Appendix F:
Finding of No Significant Impact (FONSI)

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

Wildlife Hazard Deterrent Fence Project
Tweed New Haven Regional Airport
New Haven, Connecticut

Proposed Action

The proposed action is the installation of a wildlife deterrent fence, including FAA funding.

Purpose and Need

The purpose of Tweed New Haven Regional Airport's Wildlife Hazard Deterrent Fence Project is to:

- Improve safety and prevent human injury or fatality by excluding deer and other large- to medium-sized non-avian hazardous wildlife from accessing the airfield.

The immediate and urgent need for the Airport's Wildlife Hazard Deterrent Fence Project exists because:

- On September 20, 2012 at approximately 2pm, two deer entered the runway as a jet was taking off. The aircraft struck one of the animals which caused damage to the wing and landing gear. The collision was fatal for the deer. The aircraft was able to abort the takeoff and no injuries were reported as a result of this incident.

- Tweed New Haven Regional Airport is currently only partially fenced and some of the existing perimeter fence is in poor condition; both circumstances allow wildlife such as deer and other large mammals, such as coyotes, easy access to the airfield.

- USDA Wildlife Services has conducted a Wildlife Hazard Assessment of the Airport. Due to the number of deer sightings, both the U.S. Fish & Wildlife Service (FWS) and the CT Department of Energy and Environmental Protection (CTDEEP) have issued wildlife depredation permits to the Airport. The presence of these animals on the Airport poses a significant hazard to public safety and can cause human injury or fatality upon collision with an aircraft during takeoff or landing.

- Depredation activities, in conjunction with the existing fencing, have only barely managed to prevent life-threatening wildlife interactions until 2012.

Alternatives Considered

The EA looked at several alternatives. These alternatives primarily explored different options for the alignment of the fence so that freshwater/inland and tidal wetlands

impacts could be avoided or minimized to the extent practicable. Indirect or secondary impacts due to the exclusion of wildlife habitat were also analyzed in the alignment alternatives. It was important to analyze these options although several were ultimately rejected due to design constraints, financial infeasibility, or the level of environmental impacts. Eventually, a determination was made by FAA that four alternatives should be analyzed in detail, including the no-build alternative.

Assessment

The preferred alternative proposes to install the fence along alignment #3 to minimize impacts to wetlands and wildlife, as well as develop a fence that is cost-effective, feasible to build and maintain, and would meet the requirements of the federal and state permitting agencies. This alignment differs from Action Alternatives/Alignments #1 and #2 by not following the Airport property line, notably in the southeast corner, and avoiding, to the extent practicable, impacts to tidal wetlands. It is anticipated that jurisdictional (permanent and secondary) impacts to freshwater/inland wetlands would approximate 68,662 sq ft (1.58 acres) and tidal wetlands would approximate 25,152 sq ft (0.58 acres). Approximately 124 acres of wetlands and uplands would be enclosed within the fence. This alternative has been determined to best satisfy the purpose and need for a wildlife hazard deterrent fence. The action is consistent with FAA financial feasibility constraints and design standards.

The alternatives have been scrutinized under 23 categories of concern in accordance with the requirements of NEPA. The EA report was accepted as a Federal document by the FAA on 6/27/13.

Mitigation Measures

Impacts to wetlands, wildlife habitat and water quality were identified by this action that will necessitate state or federally required mitigation. The water quality impacts can be adequately mitigated by the use of construction BMPs and the Connecticut Guidelines for Erosion and Sediment Control. Wetland and wildlife habitat impacts will be mitigated through an approved mitigation plan developed to satisfy the permitting requirements of the Connecticut Department of Energy and Environmental Protection and the US Army Corps of Engineers. See Chapter 5 of the attached EA for an explanation of the environmental consequences.

Finding of No Significant Impact

I have carefully and thoroughly considered the facts contained in the attached EA. Based on that information, I find the proposed Federal Action is consistent with existing national environmental policies and objectives of Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements. I also find the proposed Federal action with the mitigation reference in the attached EA will not significantly affect the quality of the human environment or include any condition requiring any consultation pursuant to section 102(2)(C) of NEPA. As a result, FAA will not prepare an EIS for this action.

APPROVED: R Doucette DATE: 6/27/13